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The Effectiveness of Dialectical Behavior Therapy-Based Group Skills Training in a Traditional High School Setting

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THE EFFECTIVENESS OF DIALECTICAL BEHAVIOR THERAPY-BASED GROUP SKILLS TRAINING IN A TRADITIONAL HIGH SCHOOL SETTING

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ABSTRACT

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Many adolescents in America suffer from serious symptoms related to borderline personality disorder (BPD) such as self-harming and suicide attempts. These reasons alone provide a strong case for researching effective therapies for adolescents with borderline traits. One treatment for BPD called dialectical behavior therapy (DBT) has been demonstrated to be empirically effective; however, in its current form DBT requires significant amounts of time, clinical training, and resources to carry out. Comprehensive application of DBT is too time intensive and cost prohibitive for some agencies to implement. The purpose of this study was to test the effectiveness of the DBT group skills training component with adolescents who display features of BPD. The current study also measured the applicability of DBT group skills training in a school setting, as well as its effectiveness in decreasing distressing symptoms, increasing coping skills, and reducing borderline traits in this population. This study provided a 12-week-long version of DBT group skills training with six adolescent females displaying borderline traits. Data were collected at pre- and post-treatment to assess changes in depression, anxiety, suicidality and hopelessness, and borderline traits. Additionally, progress-monitoring data were collected throughout the course of the intervention to assess changes in self-harming,

self-concept, coping skills, and hopelessness. Single-case and quantitative methods were utilized to analyze these data. Results showed that the intervention was successful in improving suicidality and hopelessness, borderline traits, and self-concept. Some changes were seen in participants' acquisition of coping skills and improvements in their experience of anxiety. No changes in depression were indicated. These findings suggest that group skills training is somewhat effective when delivered in a school setting. Future research should focus on running this therapy model for a full 24-week period to gauge further effectiveness and practicality of this treatment mode in a school setting. The findings of this study suggest that it is possible, and even beneficial, to teach a DBT–based skills group to adolescents in a school setting. This model makes it efficient for school-based mental health providers to offer high-quality mental health services to the most severely impacted students, who might otherwise be referred outside of the school for help. By delivering the service in the school building, the provider helps to ensure that the students in the most dire need of mental health services are actually receiving those services.

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INTRODUCTION

Many adolescents in the United States suffer from serious symptoms related to borderline personality disorder (BPD) such as self-harming and suicide attempts. The disorder itself, however, is typically not diagnosed until the age of 18, due to the diagnostic criteria for personality disorders outlined in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) and because many clinicians believe that personality is not fixed until individuals become adults (Miller, Muehlenkamp, & Jacobson, 2008). The BPD presents with many symptoms, but the three core features of the disorder are emotional dysregulation, disrupted interpersonal relationships, and impulsivity (Gunderson, 2009). All three of these traits, but primarily emotional dysregulation and impulsivity, can contribute to self-injurious behavior and frequent use of emergency services for suicidal ideation and suicide attempts.

According to the National Institute of Mental Health (2014), up to 80% of people diagnosed with BPD will attempt suicide at least once, and up to 9% will commit suicide. Not only are these behaviors highly dangerous for the adolescent, but also they are stressful for the caregivers of these youth and highly resource-intensive for the health care system and the providers within that system who are responsible for keeping these adolescents safe. These reasons alone provide a strong case for establishing effective therapies for adolescents with borderline traits. One treatment

for BPD called dialectical behavior therapy (DBT) has been demonstrated to be empirically effective (Groves, Backer, Van den Bosch, & Miller, 2012); however, in its current form DBT requires significant amounts of time, clinical training, and resources to carry out in an agency or hospital setting. Furthermore, the intensive nature of this model makes it especially difficult to implement in a school setting, where most adolescents spend much of their time. Therefore, research on alternate, shortened forms of this therapy is warranted.

Rationale for the Study

As noted, the original model of DBT is very extensive and includes individual therapy, a psychoeducational group, 24-hour access to a therapist, and consultation for DBT therapists (Linehan, 1993). Comprehensive application of DBT is too time intensive and cost prohibitive for some agencies to implement. As a result, many clinics only offer components of the program, but less is known about the effectiveness of these abbreviated implementation models. More research is needed to identify the most effective elements of DBT (Nelson-Gray et al., 2006; Safer, Lock, & Couturier, 2007; Trupin, Stewart, Beach, & Boesky, 2002). The purpose of this study was to test the effectiveness of the DBT group skills training component with adolescents who display features of BPD. Specifically, this study was designed to test whether the DBT skills training group was effective on its own without the other three components of the original therapy (i.e., individual therapy, phone access, and consultation for DBT therapists). The current study also measured the applicability of DBT group skills training in a school setting, as well as its effectiveness in increasing coping skills and decreasing distressing symptoms in this population.

This study was considered an important step in helping to establish the effectiveness of this abbreviated model, consistent with the practice of many agencies that routinely implement a DBT model with less than all four components in place. A full DBT approach is very extensive and would be inappropriate in a school setting for a variety of reasons, both practical (e.g., limited access to mental health support after hours and insufficient numbers of trained staff) and clinical (e.g., it is a longer term, intensive therapeutic approach). However, one component of DBT, the skills training component, offers a more psychoeducational approach that is provided in a time limited group format. If shown to effectively reduce psychopathology, including self-harming behaviors, the group skills training portion of this therapy model could be established as an effective approach on its own, placing it within reach as a viable alternative for many more low-resource agencies, including schools.

The second aim of this study was to pilot the application of DBT group skills training in a traditional school environment. Schools are an ideal location to deliver effective interventions for emotional and behavior problems to students because of the amount of access inherent in a typical school week. However, due to a lack of time, trained staff, and/or financial resources, these clinically tested therapies are often missing in the school environment (Langley, Nadeem, Kataoka, Stein, & Jaycox, 2010). The DBT group skills training could be a major asset to the educational community. If this therapy proved to be effective and seamlessly implemented in a school environment, it might serve as a model for service delivery for school psychologists and social workers in high school settings across the country.

Borderline Personality Disorder: Diagnostic Criteria

According to the DSM-5 (American Psychiatric Association, 2013), criteria for diagnosing BPD are as follows: a pervasive pattern of instability in interpersonal relationships, self-image, and affect that is characterized by marked impulsivity, beginning by early adulthood and present in a variety of contexts, as indicated by behaviors such as unstable interpersonal relationship, alternating between loving and hating individuals in his/her life, an unclear self-image, impulsivity in areas that are self-damaging such as extreme sexual behavior or substance abuse, self-harming behavior such as cutting or burning oneself, consistent emotional dysregulation, and suicidal ideation or gestures.

The presentation of the symptoms listed above are required for a diagnosis of BPD, but associated features might also include a pattern of undermining oneself at the moment a goal is about to be realized (e.g., dropping out of school just before graduation or regressing severely after a discussion of how well therapy is going). Individuals with BPD may also develop psychotic-like symptoms (e.g., hallucinations, body-image distortions, ideas of reference, or hypnagogic phenomena) during times of stress, and they might feel more secure with transitional objects (i.e., a pet or inanimate possession) than they feel in their interpersonal relationships (American Psychiatric Association, 2013).

Behavior patterns of individuals with borderline features or who meet criteria for the disorder are especially dangerous because patients displaying these behaviors are considered to be at higher risk for premature death from suicide especially in those with co-occurring depressive disorders or substance use disorders (American Psychiatric Association, 2013). Furthermore, those displaying self-harming symptoms

of BPD can suffer physical handicaps from self-inflicted abuse behaviors or failed suicide attempts. Poor grades, interrupted education, and difficulties sustaining friendships are common consequences of the behaviors displayed by adolescents with BPD (American Psychiatric Association, 2013; Mehlum et al., 2014).

Like many other personality disorders, patients with BPD are also likely to suffer from one or more separate comorbid mental disorders. Common co-occurring disorders include depressive and bipolar disorders, substance use disorders, eating disorders (notably bulimia nervosa), posttraumatic stress disorder, and attention-deficit/hyperactivity disorder. The BPD also frequently co-occurs with the other personality disorders (American Psychiatric Association, 2013; Linehan et al., 2006). As a result, the complex and extensive nature of the symptoms of BPD call for an equally complex treatment approach.

A further complication in the treatment of BPD is the potential underlying trauma that is often a part of the history of individuals with this disorder. The etiology of BPD is thought to be based in a combination of environmental trauma and a biological predisposition. It is common for patients diagnosed with BPD to have a history of physical abuse, sexual abuse, neglect, hostile conflict in their home, and/or early parental loss in their childhood. This traumatic experience, in combination with having a first degree biological relative with the disorder, makes a person about five times more likely than someone without this genetic vulnerability to develop the disorder (American Psychiatric Association, 2013).

Statement of the Problem

Adolescence is a time of major change as children are becoming adults and trying to figure out who they are in the process. The search for one's identity can bring

about greater levels of conflict as youth decide which friend group they belong in and as they try to assert their burgeoning independence with their caregivers (Luyckx, Goossens, Soenens, & Beyers, 2006). Clinicians are often reluctant to diagnose adolescents with personality disorders because of the widely held belief that personality is still developing in adolescence and that an individual's personality traits during these years are not static enough to identify any deviance from normal characteristics (Miller et al., 2008). This reluctance in the field to diagnose personality disorders for patients between the ages of 10 and 17 may lead to misdiagnosis of other mood disorders and treatments that are not appropriate for the child's actual symptomology (Miller et al., 2008).

Despite this prevalent mindset, there is research indicating that features of personality disorders are present in adolescence and can remain in place throughout adulthood, suggesting that adolescent personality traits might be more static than was initially thought (Zanarini, Frankenburg, Hennen, Reich, & Silk, 2006). This realization is important because addressing early maladaptive behaviors that are characteristic of a personality disorder may help prevent simple maladaptive behavior patterns in adolescence from turning into full-blown permanent personality traits in adulthood. Thus it is worth considering the strong evidence that exists in favor of diagnosing personality disorders in adolescents, if only so that adolescents can begin receiving accurate treatment for serious behaviors as early in life as possible (Miller et al., 2008).

Even if early diagnosis is not feasible, as in school settings, interventions may be put in place to address some of the emerging behavior patterns and to help individuals develop the coping skills needed to successfully manage their negative

thoughts and feelings. Due to the complexity of the disorder and some of its features (e.g., fear of abandonment and tumultuous interpersonal relationships), individuals diagnosed with BPD have high rates of treatment failure and attrition (Linehan et al., 2006; Panos, Jackson, Hasan, & Panos, 2013). Therefore, early treatment might help to avoid some of these problems and instead allow individuals to develop more effective strategies for dealing with these distressing symptoms.

Dialectical Behavior Therapy as the Indicated Treatment Option

Currently, DBT is the therapy with the most empirical support for its efficacy with those individuals experiencing symptoms of BPD. Across various client groups, those who receive DBT treatment demonstrate significantly better results than those receiving treatment as usual (Groves et al., 2012, Panos et al., 2013). This therapeutic approach, established by Marsha Linehan, grew from her clinical practice as a behaviorist who spent much of her time working with women who were chronically suicidal and self-injurious (Koons, 2008). She noticed in her practice that traditional behavioral methods were not effective for these women and that a common thread in their behavior and symptom presentation was an inability to regulate their emotions. Linehan observed that her patients were overwhelmingly prone to extreme fluctuations in emotion, which led to instability in their relationships, paranoia, dichotomous thinking, and impulsivity (most often in the form of self-harm and suicide). She hypothesized that the etiology of BPD was explained by a biosocial model of emotional dysregulation (Linehan, 1993).

Linehan's biosocial model indicated that people who develop BPD do so because they are born with a genetic predisposition towards emotional vulnerability

(the biological component) and spend their childhood being invalidated for their emotional extremes (the social part). In other words, children are born with an emotional vulnerability that may result in either a low, middle, or high action threshold for emotional response; that is, those with the highest levels may experience an extreme emotional response to typical situations. In turn, the caregivers of these children may observe the child becoming upset to an extreme degree over things that the caregiver deems trivial, and the caregiver consequently models an invalidating response to the child. In time, a pattern emerges in which the child readily becomes very emotional over seemingly minor slights, and the parent grows tired of these extreme responses and begins to ignore or suggest that the child's emotions are not real (Crowell, Beauchaine, & Linehan, 2009).

This pattern of invalidation is problematic because the child begins to develop problems with understanding and trusting her own emotions. Caregivers are the primary teachers of emotional regulation, meaning that children learn how to soothe themselves when parents teach them how to calm down (Crowell et al., 2009). If parents are not able to provide this teaching, either because of their own lack of regulation or because they view their child as exaggerating her emotions, the child grows into an adult without having learned emotional regulation. Thus not only does the biosocial theory explain the etiology of BPD, it also explains how the disorder is maintained throughout adulthood (Linehan, 1993).

Linehan wanted to create a therapy that addressed the symptoms of emotion dysregulation because she knew that this specific symptom could only be helped to a small degree with medication. In keeping with this position, the goal of DBT is to improve patients' quality of life and decrease their symptoms by reducing "ineffective

action tendencies associated with dysregulated emotions" (Lynch, Chapman, Rosenthal, Kuo, & Linehan, 2006, p. 475). There are three theoretical underpinnings that have contributed to the development of DBT: dialectics, Zen Buddhism, and behaviorism. Each is explained in order to further elucidate the goals of the therapy.

Dialectics

Thousands of years before the first wave of behaviorism, the root of DBT, the Greek philosopher Zeno of Elea invented the practice or game of dialectics. The word dialectics originates from the Greek word dialektos, meaning debate or discourse, and Plato considered it to be the highest embodiment of knowledge (Dialectic, 2001). More recently, dialectics has been used to describe the polemic nature of the world, the idea that there are two sides to everything, the same way there are two people arguing their points in a Socratic dialogue. According to Hegel, Miller, and Findlay (1977), dialectic is the tension that exists in everything in nature between a thesis and its antithesis. This tension is resolved in a synthesis, the meeting of the two in the middle.

Both the Plato and Hegel et al. (1977) definitions of dialectics apply to the theory of DBT. The dialectical part of DBT is rooted in Linehan's theory that acceptance and change are two diametrically opposing forces: therapies that push clients to accept their condition, systematically discourage clients from changing; and therapies that push clients to change, by definition, discourage clients from accepting who they are (Rathus & Miller, 2015). According to the philosophy of dialectics, the solution is to create the synthesis of the two poles, meeting in the middle with both acceptance and change.

As previously noted, the biosocial theory of BPD hypothesizes that the disorder originates from a biological predisposition towards emotional vulnerability, a trait that the client is encouraged to accept about himself or herself. The social learning component of the biosocial model explains how clients have been invalidated for maladaptive reactions to extreme emotions; these are thoughts and behaviors that clients need to change in order to have more positive interactions with the world in which they live. Thus the dialectic is the synthesis of accepting strong emotions and changing negative reactions to these emotions. Dialectical theory is also foundational in the tangible practice of DBT; the therapist tries to embody dialectical thinking in the session (i.e., not always trying to be right or allowing the client to always be right) and to help the client develop coping for daily living that is based in both acceptance and change strategies.

Zen Buddhism

It is rare to find any modern cultural practice that is rooted solely in Western ideals; psychotherapy and DBT are no exception. The second major theoretical underpinning of DBT is the practice of mindfulness and other principles derived from Zen Buddhism. During World War II, American psychologists were stationed in Japan and were exposed to the work of the therapist Shoma Morita. Morita invented a therapy based on Zen Buddhism to counteract the anxiety he was seeing in patients who suffered from the perfectionism prevalent in Japanese culture (Dryden & Still, 2006). Morita's treatment consisted of two basic principles of mindfulness in accepting yourself and your feelings as you experience them (i.e., taking a nonjudgmental stance) and being absorbed in the task at hand (e.g., doing one thing at a time). Though Morita's specific therapy never became popular in the United States,

the idea of approaching suffering and anxiety from a more passive, nonjudgmental place was appealing to many Americans post-war (Dryden & Still, 2006). Almost 50 years later, Jon Kabat-Zinn, a contemporary of Linehan, adopted a definition of mindfulness from Buddhism and popularized its practice as a tool for therapists. Kabat-Zinn (1994) defined mindfulness as "paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally" (p. 4). This description is exactly how it is used in DBT. Beyond mindfulness, the acceptance of reality as it is, another central tenet of Zen Buddhism, is also a pivotal skill taught in DBT (Koons, 2008).

Behavioral and Cognitive

Behavioral Roots

The next component of DBT, validating clients' perceptions of their experience, is an extremely important aspect of this model. Thus as it emphasizes a partially experiential approach, DBT is quite clearly not a purely behaviorist therapy. Although on the surface DBT does not appear to be a behaviorally-based therapy, it does contain some practical components of behavioral theory. Behaviorists believed that all human learning, including behavior, could be explained by stimuli in the environment that prompted a response from the individual. The antecedents (i.e., stimuli that occurred before a behavior) could elicit a behavior, and the consequence of that behavior could result in either an increased or decreased frequency in the behavior, depending on whether the respondent considered the consequence to be aversive or pleasurable. What follows then was the theory that if one could predict and manipulate either the antecedent or the consequence or both, then one would be able to control the behavior in between.

The practical implication of this theory for DBT was that if the therapist and the client could figure out the antecedents and consequences for the maladaptive behaviors, they could then try and change either what came before or after the maladaptive behavior in hopes of changing the behavior itself. Because the behavioral responses were quite complex, this process would occur through behavior chaining (a technique used by behavioral scientists) and one that is often used on self-harming behaviors like cutting or drug use. Using this approach, clients are asked to report when they cut themselves or use drugs, and the therapists and clients work together to break down all the events leading up to the maladaptive behavior. Additionally, they explore the behaviors that occurred directly after the behavior, especially how the client was feeling at the time. For example, a simplistic chain might look like: client gets in an argument with her mother, she cuts herself as a method for emotional release, the client feels better temporarily, and her mother notices the cut and apologizes for the fight. In this case, the behavior is being initiated to try and avoid pain caused by the fight, and the client is reinforced by the relief felt after cutting and the apology received from her mother. The therapist would apply behavioral theory and techniques by changing what happens after the cutting to minimize the reinforcement.

Given the complexity of this multi-theoretical and skills-based approach, it is possible to see how DBT could have a wide range of therapeutic uses and applications. However, little is known about which specific aspects are necessary for behavioral change. The full model of DBT is comprehensive in its approach and contains several elements designed to address different type of symptoms of BPD. The current study

sought to broaden the applications of this already useful therapy by condensing the therapy from four parts to one and by conducting the therapy in a school setting.

Research Design

Using single-case methodology, this study evaluated the effectiveness of the group component of DBT therapy as delivered to adolescent females who were demonstrating features of BPD (e.g., unstable relationships or self-injurious behavior). Using data from initial measures (administered prior to the start of the group) as well as weekly progress monitoring, the study assessed participant change over the course of the 12-week group therapy. This intervention was delivered in a traditional high school setting. It was expected that participants would report a decrease in their distressing symptoms and an increase in their coping strategies during the course of treatment as well as decrease their presentation of borderline features. Based upon the preceding discussion, the following hypotheses were proposed:

H1 The group skills portion of dialectical behavior therapy delivered on its own will effectively reduce distressing symptoms in adolescents with borderline features, specifically: (a) Adolescent females who participate in group skills therapy will demonstrate lower levels of depressive symptoms, (b) adolescent females who participate in group skills therapy will demonstrate lower levels of anxiety symptoms, and (c) adolescent females who participate in group skills therapy will demonstrate lower levels of suicidality and hopelessness.

H2 Adolescent females who participate in a dialectical behavior therapy skills group will demonstrate an increase in their coping skills.

H3 Adolescent females who participate in a dialectical behavior therapy skills group will demonstrate fewer features of borderline personality disorder, specifically: (a) Adolescent females who participate in group skills therapy will demonstrate lower levels of non-suicidal self-harming, (b) adolescent females who participate in group skills therapy will demonstrate increased levels of self-concept, and (c) adolescent females who participate in group skills therapy will demonstrate lower levels of borderline personality disorder traits.

Delimitations

There were a few delimitations presented by the research design in the current study. Although the single-case methodology allowed a formative understanding of the effectiveness of the therapy, the lack of a wait-list control group, and the small sample size limited the generalizability of the findings to other populations. Another limitation was that the group skills trainer (i.e., the researcher) had some formal training in DBT; the "gold standard" of 80 hours of training that is required for DBT certification had not been obtained. Therefore, the researcher/facilitator may have lacked some of the experience and expertise that would aid in better administration of the therapy. Finally, there was no way to control for participants who missed some sessions of group therapy due to illness or time conflicts over the course of 12 weeks.

Definitions

Borderline features: Individuals who demonstrate three or more traits of BPD as defined by the DSM-5 without necessarily meeting the full criteria for diagnosis (five or more traits) are considered to have features of BPD. Typically, at least one of these traits needs to be non-suicidal self-injury (NSSI) (Mehlum et al., 2014).

Coping skills: Behaviors a person uses to reduce distress; these behaviors can be positive or negative and can include self-harming as an obviously negative example. In this study, the term coping skills referred to positive and negative behaviors. Positive coping skills are behaviors that reduced distress without causing physical or emotional harm to the person performing them or to those around the person performing them. Examples of positive coping skills might include listening to music, drawing, writing in a journal, exercising, or talking

to a friend. Negative coping skills are behaviors that are perceived to reduce distress but may cause physical harm or further emotional harm in the short or long term. Examples of negative coping skills include self-harming, binge eating, using drugs or alcohol, starting a fight with a loved one, and isolating oneself from others.

Non-suicidal self-injury/parasuicide/self-harming: These are interchangeable terms used to describe an action that is the deliberate, direct destruction or alteration of body tissue without conscious suicidal intent but resulting in injury severe enough for tissue damage to occur (Gratz, 2001). Examples include cutting the skin with a blade or other sharp object such as glass or a fingernail and burning the skin with fire or chemicals.

Summary

The BPD is the most commonly diagnosed personality disorder in the United States. Symptoms of BPD include emotional dysregulation, identity confusion, intense fear of abandonment and impulsive maladaptive behaviors such as self-harming, drug abuse, and promiscuity, amongst others. While the disorder cannot be diagnosed until the age of 18, there is research to show that the symptoms begin to manifest in early adolescence. Early treatment of the BPD may lead to better outcomes and avoiding a full diagnosis with the disorder as an adult. The DBT is an empirically supported treatment for adults, and a version of the therapy has been modified for adolescent treatment. This study looks at the treatment of adolescent females displaying traits of BPD with DBT group therapy administered in a traditional high school setting.

CHAPTER II

LITERATURE REVIEW

Psychotherapy has traditionally been the foundation for treating mental health problems (Olfson & Marcus, 2010). Though long ago there were few therapeutic options for therapists to choose from and singular theories seemed to guide practice (e.g., behavioral and psychodynamic). Over the years numerous models have emerged, and there are presently dozens of therapeutic models, with more emerging all the time (Olfson & Marcus, 2010). As research continues to focus on the most effective evidence-based therapies for specific mental health issues, it is important that mental health practitioners have an understanding of the breadth of therapeutic options so that they may select and implement the most appropriate therapy to treat each unique client to the best of their ability (Olfson & Marcus, 2010). This is especially true of treatments for personality disorders, which are among the most difficult mental health issues to treat.

One of the most commonly diagnosed personality disorders is borderline personality disorder (BPD), which is estimated to affect 8% to 11% of outpatient mental health clients and up to 20% of inpatient clients (Long & Witterholt, 2013). With such high rates of diagnosis of BPD, dialectical behavior therapy (DBT) has established itself as an essential new therapy for clinicians to have in their "tool box" so that they can effectively treat up to one fifth of their patient population. Moreover,

BPD is characterized by highly dangerous behaviors such as self-harming, eating disorders, drug-abuse, and suicide attempts; thus it is of especially high importance to treat it effectively.

History of Dialectical Behavior Therapy in Three Waves

In modern psychotherapy, there has been a proliferation in the practice of a group of therapies called third wave treatments. The term third wave comes from the idea that this new group of therapies is the third generation to emerge from the original or first generation therapies such as behaviorism/behavioral therapy and a second generation approach, cognitive behavioral therapy. Some of the more common third wave therapies include acceptance and commitment therapy (Hayes, Strosahl, & Wilson, 1999), mindfulness-based therapy (Segal, Williams, & Teasdale, 2001), metacognitive therapy (Wells, 2000), schema-based therapy, and DBT (Kahl, Winter, & Schweiger, 2012; Linehan, 1993).

As might seem obvious from the aforementioned list, this group of therapies is very heterogeneous and perhaps should not be grouped together at all. However, one of the similarities shared by these therapies is that they are all in some part based in an orientation that strives to change maladaptive human behavior and cognition. The term third wave implies that trying to understand and change human behavior and cognition started with the first wave, behaviorism, then transitioned into a second wave with the popularization of cognitive psychology and the development of Aaron Beck's cognitive behavioral therapy, and finally into a third wave of therapies. These approaches not only share theoretical similarities with their predecessors, but incorporate new and unique non-behavioral components into their models, making

each highly divergent from one another. In order to better understand these third wave therapies, an exploration of their roots is warranted.

First Wave: Behaviorism

Behaviorism is a science that purports its chief goal to be predicting and controlling behavior (Watson, 1913). Behaviorists consider behavior itself to be the most important component in learning and do not consider personal interpretation of experience to be valuable (Watson, 1913). A key tenet of behaviorism is the objective and measurable definition of behavior. Consequently, behavioral therapy grew out of behaviorism (Watson, 1913) and neo-behaviorism (Skinner, 1938) and was a response to other popular therapies that behaviorists considered to be completely without empirical support such as psychoanalysis and humanism. Early behavioral therapists focused not on human perception or experience, but on observable behavior and emotion. They wanted to help clients become functional immediately and were not worried about the unconscious or past-related causes of the client's symptoms (Hayes, 2004).

Second Wave: Cognitive Behaviorism

In the 1960s, cognitive psychology began to emerge and provided a much more complex and comprehensive explanation of learning than had been previously provided by behaviorism (Hayes, 2004). Around the same time, Skinner, a neo-behaviorist, was challenged to come up with an explanation for language and cognition and failed to do so to the satisfaction of his critics, stating that though it was possible to objectively study cognition and feelings (Watson had previously contended this was not possible) it was not necessary to the study of overt behavior (Hayes,

2004). Skinner's explanation was not sufficient for those who wanted to understand more complex human phenomena. So, at this time cognitive theory took over as the new theory of learning that was in vogue. This change allowed psychologists and scientists to answer more of their questions about human thinking and feeling without having to abandon behaviorism entirely. With the ushering in of cognitive theory came the new cognitive model of therapy developed by Aaron Beck, whereby therapists and clients sought to change maladaptive thinking patterns and, in turn, change feelings and overt behaviors (Beck, 1979). Beck intended to create a therapy that was an alternative to psychoanalysis and behaviorism. Behaviorists were quick to notice the behavioral practices inherent in Beck's therapy and re-named the treatment from the original cognitive therapy to cognitive behavioral therapy, a name that continues today (Hayes, 2004).

Third Wave: Dialectical Behavior Therapy

The relationship between thoughts, feelings, and behaviors is the central premise of cognitive behavioral therapy. Yet, Linehan viewed the focus of cognitive behavioral therapy as too narrow and found that emotional regulation was not a strong enough focus of Beck's treatment. Thus she decided to create a new therapy, with roots in cognitive behavioral therapy, but which more thoroughly addressed the cause of her patients' suffering, and in doing so moved from the second wave to the third. As noted, there are several different third wave therapies, but for the purpose of this study, only DBT is discussed.

Components of Dialectical Behavior Therapy in Clinical Practice

Like most therapeutic models, DBT starts with a set of assumptions on which the therapy is based. These assumptions are stated as follows: (a) people are doing the best they can; (b) people want to improve; (c) people need to do better, try harder, and be more motivated to change; and (d) people may not have caused all their problems, but have to solve them anyway. More assumptions include the notion that the lives of patients are painful as they are currently being lived and that patients must learn new behaviors in all important situations in their lives. Practitioners of DBT also believe that there is no absolute truth and that it is more effective to take things in a well-meaning way than to assume the worst. Finally, practitioners adhere to the belief that patients and their family members cannot fail at DBT (Rathus & Miller, 2015).

Utilizing these assumptions as the foundation of practice for DBT, clinicians implement four components of therapy when DBT is practiced in its complete form: individual therapy (once weekly for an hour), group skills training (once weekly for approximately two hours), phone consultation between the therapist and the client (as needed and in the case of emergency), and consultation groups between all therapist practitioners of DBT (once weekly for an hour). The primary goal of the therapy is to reduce parasuicidal and life-threatening behavior. The secondary goal is to reduce therapy-interfering behavior (particularly attrition), as clients with BPD have notorious high attrition rates in therapy (Chiesa, Drahorad, & Longo, 2000). Finally, once the first two goals are achieved, the tertiary goal is to reduce behaviors that seriously interfere with quality of life.

The focus of each individual therapy session is determined by the patient's most recent behavior as related to the prioritized goals (Linehan, 1993). For instance, if the client self-harmed the night before therapy, individual therapy would be utilized to work with the client on behavior chaining to reduce parasuicidal and life-threatening behaviors and also to learn and practice mindfulness and alternative coping skills to replace self-harming behaviors (Linehan, 1993). If the client has not self-harmed in the preceding weeks, is attending therapy, and cooperating with her therapist, then individual therapy sessions focus on ways that the client relates to his or her family and friends (if this is the area in which the client's quality of life is most impacted).

Group skills training is utilized to teach clients the skills that are important to DBT and to allow an opportunity to practice these skills with other DBT clients. During this time, discussion of personal issues is not allowed (that is a component of individual therapy). Phone consultation is set up for emergency situations when clients feel they are going to self-harm or attempt suicide, and the therapist is able to help them chain their behavior over the phone or suggest alternative coping mechanisms (Linehan, 1993). Phone consultation should theoretically only be needed in the beginning months of therapy when the client is not yet proficient with chaining and coping skills. Finally, consultation groups are run with all of the therapists practicing DBT within a given setting, so that the therapists may talk with one another about feelings they are experiencing as they work with such challenging clients and so that they can advise each other on next the steps in difficult situations (Linehan, 1993). The therapist consultation group is considered a safeguard against burnout for the therapists, as working with clients who can act manipulative and who regularly put

themselves in danger can be very draining. Thus all four components of the therapy carry a specific purpose, and many clinical practices utilize all four components of the DBT model. However, as noted, many other clinical practices utilize less than all four components because to do all four would be impractical in terms of time and cost (Groves et al., 2012).

Foundational Components of Dialectical Behavior Therapy

The DBT is a complex therapy that utilizes many skills, tools, and techniques to achieve improvement for clients; but, there are few components of DBT that are truly hallmarks of the therapy. Understanding these components allows for a basic comprehension of what the therapist hopes to achieve and how she hopes to achieve it. The first thing that is taught to clients in DBT is the difference between wise mind, emotional mind, and rational mind (Rathus & Miller, 2015). Clients are shown an image of a Venn diagram with the circle on the left labeled rational mind, the circle on the right labeled emotional mind, and the overlapping part in the middle labeled wise mind. It is then explained that rational mind is the place we are in when we are thinking about facts and are mostly devoid of emotion (Rathus & Miller, 2015). An example of this is when we are doing our taxes or paying bills. Applying one's math skills is not an inherently emotional task and usually does not make people feel emotional. Therefore, the part of our mind that we are using when completing purely rational tasks is called our rational mind. Conversely, emotional mind is the term for the mindset we are in when we are extremely emotional (remembering that people with BPD often experience emotions more intensely than those without BPD). Emotional mind is the place where people make impulsive decisions without thinking

about the facts because they are upset (Rathus & Miller, 2015). An example might be quitting a job over a small criticism or breaking up with a significant other over a minor disagreement.

Wise mind is the place in the middle (from dialectical theory) where people take both facts and emotion into consideration before behaving. Clients are taught that it is better to be in rational mind than emotional mind when making a decision, and it is ideal to be in wise mind when making a decision. Mindfulness techniques are taught to help get the client out of emotional mind and into rational mind. It is thought that once clients can master this transition, they can start to use wise mind more often, though it is difficult to use wise mind all the time (Rathus & Miller, 2015). Using mindfulness, clients are taught to focus on the task at hand (e.g., cutting vegetables, reading a book, or talking a walk) and only that task. By doing so, the client is able to move past the impulse of emotional mind and into a calmer place. Additionally, as noticed by Morita, it is quite difficult to feel anxious or upset about the past or the future if one is focusing on the present (Dryden & Still, 2006). Mindfulness is also used to help clients move out of emotional mind by having them acknowledge the emotions they are feeling, not judge themselves for feeling those emotions (as they might have learned to do as a child), and then letting the emotion go. The analogies used in teaching this skill include picturing a soda bottle that has been shaken. If you take the lid off all at once it will explode, but if you release the lid bit by bit, the carbonation will subside. Another visualization that is taught is observing your emotions as they go by, as if on a conveyor belt.

Another key skill that is taught in DBT is radical acceptance (Rathus & Miller, 2015). Radical acceptance is also directly derived from Zen Buddhism and is the skill

of recognizing what cannot be changed in life and accepting that reality without suffering. A key example of this component occurs with clients who have BPD in that they are encouraged to accept their own emotional vulnerability. Many people with BPD have experienced intense mood swings for most of their lives, and knowing that this is a condition that is going to continue to affect them can make them even more depressed. Clients are taught to radically accept that this is their reality and feeling upset about this reality does not change the circumstance, it only causes more suffering. Another example of an opportunity for radical acceptance comes when working with adolescents. Oftentimes, adolescents experience extreme conflict with their parents and cause themselves to suffer because they wish that their parents would change. In DBT, they are taught that their parents may or may not change, so accepting their parents for who they are is the path with the least suffering involved.

The final key component of DBT is behavior chaining (Linehan, 1993). Behaviorists believed that all human learning and thus behavior could be explained by stimuli in the environment that prompted a response from the individual. The antecedents (i.e., stimuli that occurred before a behavior) could elicit a behavior to begin, and the consequence of that behavior could result in a subsequent increase or decrease in that behavior, depending on whether the respondent considered the consequence to be aversive or pleasurable. What follows then was the theory that if one could predict and manipulate either the antecedent, the consequence, or both, then one would be able to control the behavior in between. This approach is applied when the therapist and the client figure out the antecedents and consequences for the maladaptive behaviors and then try and change either what came before or after the maladaptive behavior in hopes of changing the behavior itself (Linehan, 1993).

In summary, mindfulness, radical acceptance, and behavior chaining are the three foundational skills to a successful DBT practice and are critical to what makes DBT successful as a therapy. These skills are taught and practiced through a combination of group and individual therapy with supportive phone consultation as needed.

Empirical Support for Dialectical Behavior Therapy

The DBT has been recognized as an evidence-based intervention, given the robust number of studies supporting its use with a variety of populations (e.g., Groves et al., 2012; Kleim, Kroger, & Kosfelder, 2010; Panos et al., 2013). More than 29 controlled experimental studies have been conducted by more than 21 independent research teams utilizing DBT to treat adult patients with BPD (Panos et al., 2013). Additionally, some of these studies have demonstrated the effectiveness of DBT as compared to treatment as usual or another type of therapy. Specifically, DBT is significantly more effective than other treatment types (e.g., client-centered therapy or pharmacotherapy alone) in reducing self-harming and suicide attempts. Thus far, the bulk of the DBT research has mostly focused on adult populations with participants aged 18 and older, providing strong evidence as to the efficacy of this therapy model for adult populations only (Panos et al., 2013).

Effectiveness of Dialectical Behavior Therapy in Adult Populations

The use of DBT as a treatment for BPD in adults (particularly women) began with one foundational study by Marsha Linehan in 1991. At this time, there had been no other controlled experimental studies published on the psychotherapeutic treatment of BPD, although at the time 11% of all psychiatric outpatients and 19% of all

psychiatric inpatients met criteria for the diagnosis (Linehan, Armstrong, Suarez, Allmon, & Heard, 1991). Her study focused on patients who were diagnosed as parasuicidal (engaging in intentional, acute self-injurious behavior with or without suicidal intent) and who met the diagnostic criteria in the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) (the most current DSM at the time of the study) for BPD. The experimental treatment used was DBT, a therapy that Linehan had just created and had not yet studied. The control therapy that was chosen for the study was treatment as usual (i.e., psychotherapy from therapists not practicing behavioral therapy) in the community.

Linehan's study participants included 44 adult women (22 in each group) who were matched based on a variety of indicators (e.g., hospitalizations or clinical prognosis). Individuals in the treatment group received individual DBT therapy for one hour each week and two and a half hours of DBT group skills therapy weekly, for a total of three and a half hours of weekly treatment, in addition to having access to their therapist over the phone if they chose to make that additional contact. Participants agreed to taper off of psychotropic medications as a condition of therapy. Those in the control group were allowed to choose a therapist/treatment type available to them in their community. Assessments were conducted pre-treatment, at the four-month mark of treatment, at the eight-month mark, and at the one-year mark (post-treatment). Participants were assessed using a variety of measures on the variables of interest (e.g., suicidal ideation, depression, and coping).

Linehan et al. (1991) delineated the results of the study based on three outcome goals: decreased parasuicidal behavior, maintenance in therapy, and a reduction in psychiatric inpatient treatment. Subjects in the control group were significantly more

likely to have engaged in parasuicidal behavior than subjects in the treatment group even when excluding those with no parasuicide attempts during treatment from the data. Significantly more subjects in the DBT group remained in individual therapy with the same therapist for the entire year (83.3%) than did those in the control group (42.0%). Finally, participants in the control group had significantly more days in the hospital per person than those in the treatment group; furthermore, those in the control group also had a higher number of inpatient hospital days. Thus those in the control group had to utilize emergency services more often and were hospitalized for longer when they were admitted than those in the treatment group. Essentially, all three goals of the brand-new DBT treatment were met in this pioneering study by Linehan et al. (1991).

In 2006, Linehan and colleagues published another large-scale randomized controlled trial of DBT with women diagnosed with BPD. Similar to her 1991 study, she hypothesized that DBT would be more effective at reducing symptoms of BPD (suicide, suicide attempts, self-harming, hospitalizations, and treatment drop-out) than psychotherapy delivered by non-behavioral therapy experts (Linehan et al., 2006). This study featured a much larger participant pool, including 100 women diagnosed with BPD who had at least two suicide attempts or any incidences of self-injury in the past five years. The two experimental groups consisted of DBT treatment from therapists trained in a 45-hour seminar and a control group of patients receiving therapy from other therapists who were not behaviorally trained and classified themselves as psychodynamic or eclectic in terms of theoretical orientation (community treatment by behavioral experts).

The subjects received two years of treatment and one year of follow-up assessment. They were assessed at baseline, at four-month intervals throughout treatment, and at follow-up. Results of the study showed that participants in the DBT treatment group experienced one half the number of suicide attempts as those receiving community treatment by behavioral experts. Additionally, those in the DBT treatment group experienced significantly fewer hospitalizations than those in the community treatment by behavioral experts group, and the dropout rate for participants in the DBT group was 25% as compared to 59% in community treatment by behavioral experts group. Thus all of the goals of treatment for DBT were met in this two-year trial and were maintained at a one-year follow-up, providing more evidence of the DBT efficacy for this population. This randomized control trial provided more evidence for the efficacy of the DBT suite of treatments with adult women by yielding significant results, even after employing the most rigorous scientific control methods to the research and showing that the results were maintained even a year after treatment was completed.

Although the original study launched the popularity of DBT as the favored treatment for BPD, continued research has consistently supported the effectiveness of this approach. Linehan has also continued to publish high quality studies on this therapy that have yielded results which warrant a continued consideration of DBT as the most effective form of treatment for people diagnosed with BPD (Panos et al., 2013). Twenty-four years after Linehan's foundational study, DBT is an internationally practiced therapy for the treatment of BPD, and dozens of studies have been published on the efficacy of this approach.

Due to the current wealth of research published on DBT, it is worth considering a recent meta-analysis of the work conducted by Kleim et al. (2010) who summarized the results of research with adults with a BPD diagnosis who had received DBT. The meta-analysis included 16 studies of both randomized controlled trials (n = 8) and non- randomized controlled trials (n = 8) from studies published up until October 2009. Statistical tests were put in place to compensate for the bias tendencies that occur between non-randomized control trials and randomized control trials so the two types of studies were not being compared against one another without compensating mathematically. The researchers also corrected effect sizes for potential bias due to small sample sizes in some of the studies.

Hierarchical linear modeling was used to analyze data, and effect sizes were calculated on suicidal/self-injurious behavior and therapy attrition (i.e., dropout). The meta-analysis revealed a moderate effect size for DBT in the treatment of patients with BPD. This was true as well for the specific outcome of reducing suicidal and self - injurious behavior. The researchers did not find a significant difference in dropout rates between DBT patients and those receiving control conditions, meaning other types of therapy. Because reducing attrition (a therapy interfering behavior) is one of the main goals of DBT, this was an important finding to note and should be investigated with further research. Even while considering the finding related to patient dropout, this meta-analysis confirmed that the full DBT model was effective in reducing life-threatening behaviors in adult patients with BPD (Kleim et al., 2010).

Dialectical Behavior Therapy for Adolescents

One of the benefits of this research is not only to establish the efficacy of the treatment, but also to develop an understanding of how it helps to change the behaviors and cognitions of individuals of all ages with BPD. There has been a significant amount of research conducted on DBT with adults with BPD, showing time and time again that DBT is an effective therapy. Because DBT has proven to be efficacious with an adult population with borderline features, and because those same features can present very similarly in adolescents, it stands to reason that DBT could be an effective treatment for adolescents as well. In fact, adolescents displaying borderline features (three or more symptoms of BPD without full diagnosis) often show similar symptom structure and etiology of symptoms when compared to adults with BPD (Chanen, Jovev, McCutcheon, Jackson, & McGorry, 2008). Moreover, adolescents present similar patterns of instability as adults with BPD (Chanen et al., 2008). Considering that self-harming and suicide attempts are two of the hallmark symptoms of BPD, it is especially important to treat adolescents exhibiting these dangerous behaviors with a therapy that is effective for those behaviors specifically.

The DBT was first adapted for adolescents in 1997 by Miller and his colleagues (Miller, Rathus, Leigh, Landsman, & Linehan, 1997). Noticing the lack of empirically researched treatments for adolescents who were suicidal and/or parasuicidal, Rathus and Miller (2002) decided to try a version of DBT with this population. Because the core tenets of the therapy are to reduce suicidal and parasuicidal behavior, and because the primary skills that are the focus of DBT (i.e., emotion regulation, interpersonal effectiveness, distress tolerance, and

mindfulness/attentional control) align closely with common issues experienced in adolescence (e.g., mood dysregulation, unstable relationships, impulsivity, and identity confusion), they hypothesized that this treatment would be successful (Rathus & Miller, 2002).

It is essential that adolescents begin to receive treatment as early as possible due to the dangerous nature of their symptoms and because of the possibility that they will continue to display symptoms into adulthood. If treated early, it may be possible to prevent the full expression of BPD and reduce later impairment. An in-depth review of the literature on DBT with adolescents supports the use of this modality with this younger client population.

Effectiveness of Dialectical Behavior Therapy for Adolescents

In 2002 Rathus and Miller published a treatment manual and a study on a shortened form of DBT adapted for adolescents that they created and termed **DBT**–**A**. The researchers adapted the original version of DBT in collaboration with Marsha Linehan, creating an adolescent therapy that shortened the length of treatment from 16 to 12 weeks, making treatment completion a more attainable goal for a population that is notorious for a high attrition rate (i.e., adolescents with suicidal behaviors). They also included parents in group skills training to increase the generalization and maintenance of skills learned in group beyond just the adolescents being treated, but also to their family members who often were somewhat dysfunctional. Further, parents and other family members were invited to participate in individual therapy sessions where familial issues were discussed. The number of skills taught was reduced, and the language was changed to make the lessons more palatable to an adolescent

audience. Finally, they added a fifth module to the therapy called Walking the Middle Path, meant to include caregivers in the process of learning validation skills, behavioral principles, and dialectical thinking (Groves et al., 2012).

For their study, Rathus and Miller (2002) included 111 outpatient adolescents who were seeking treatment for suicide and depression. The criteria for selection in the study included a previous suicide attempt within the past 16 weeks and a diagnosis of BPD or at least three borderline features as measured by the Structured Clinical Interview for the DSM. Instead of assigning groups based on random assignment, subjects were placed into the DBT group based on the severity of their symptoms, resulting in 82 participants being assigned to the treatment as usual group and 29 being assigned to the DBT group; the participants with the most severe symptoms were assigned to the DBT group. The DBT treatment consisted of 12 weeks of twice-weekly sessions of individual therapy and group skills training. The treatment as usual group consisted of 12 weeks of twice weekly individual and family therapy with therapists who identified as utilizing psychodynamic and supportive techniques. After accounting for pre-treatment differences in severity between groups, the results indicated that the number of inpatient hospitalizations for the treatment as usual group were significantly higher at 13% than for the DBT group which was 0%. There were no significant group differences on suicide attempts while in treatment, but the researchers noted that this may have occurred because the sample size was too small to obtain statistical significance. In the treatment as usual group there were seven participants who attempted, while only one participant attempted in the DBT group. Finally, 40% of participants in the treatment as usual group completed treatment, while 62% of the participants in the DBT group completed treatment, a difference

large enough to be statistically significant (Rathus & Miller, 2002.) Thus this early trial suggested that the Rathus and Miller adaptation of DBT for adolescents might be an effective form of therapy for this population.

Since then, several other studies have been published utilizing DBT–A with outpatient adolescent populations who are experiencing problems with suicidal ideation, suicide attempts, and non-suicidal self-injury (NSSI). For example, in 2006 Fleischhaker, Munz, Böhme, Sixt, and Shultz conducted a study with 12 adolescent outpatients who displayed at least three symptoms of BPD and had committed acts of NSSI in the last four months. In fact, two-thirds of this group had attempted suicide at least once in the four months before treatment began. In a pre-post comparison design, the researchers found that after 16 sessions of individual therapy and 24 sessions of group therapy, participants showed a significant decrease in NSSI, suicidal ideation, and depressive symptoms (Fleischhaker et al., 2006). Thus Fleischhaker et al. (2006) were able to support the findings of Rathus and Miller (2002) that their unique adaptation of DBT for adolescents was, in fact, effective at reducing symptoms with the suicidal and self-harming adolescents in outpatient settings.

In 2008, Woodberry and Popenoe adapted this approach by including caregivers in every step of the therapy, reasoning that for adolescents much of the interpersonal conflict they experience involves interactions with their caregivers. They conducted a 15-week (one individual and one group session per week) open trial of DBT with a pre-post design in an outpatient clinic. The participants included 46 adolescents who displayed a history of NSSI, suicide attempts, and unstable affect or relationships within the last three to six months. The researchers found significant reductions in depression, anger, dissociative symptoms, NSSI, and suicidal ideation.

This study by Woodberry and Popenoe not only contributed support to the effectiveness of DBT for adolescents, they also added new information by reporting that caregivers' depressive symptoms decreased after treatment of their child, indicating a transitive property of the therapy.

Finally, rounding out the research supporting DBT as an effective therapy for adolescents, a German study utilizing DBT–A with adolescents displaying borderline features was conducted and included a one-year follow-up post-treatment (Fleischhaker, Böhme, Sixt. Brück, & Schneider, 2011). In this study, the researchers hypothesized that DBT–A would be an effective treatment for patients with suicidality and NSSI. The participants selected were 12 adolescents (ages 13 to 19) who had self-harmed or presented with suicidal ideation in the last 16 weeks and who either had a full diagnosis of BPD or displayed at least three symptoms of the disorder. The participants were treated with DBT–A (Rathus & Miller, 2002) for 16 weeks, which included one hour of individual therapy and two hours of group therapy weekly for the duration of the study. When participants were screened one year after the completion of treatment, the mean number of symptoms displayed was reduced from 5.8 to 2.75. The researchers concluded that the intervention was successful in reducing suicidality and self-harm, emotional dysregulation, and depression (Fleischhaker et al., 2011). Furthermore, one year after treatment had terminated, adolescents were still showing improvements.

Other studies have also shown the effectiveness of DBT for adolescents in a variety of settings and with symptoms other than borderline features and suicidal ideation. For example, studies have been carried out using DBT for adolescents in residential treatment facilities (Sunseri, 2004), juvenile detention facilities (Trupin et

al., 2002) and with those diagnosed with bipolar mood disorders (Goldstein, Axelson, Birmaher, & Brent, 2007) and with oppositional defiant disorder (Nelson-Gray et al., 2006). In each study, positive outcomes were reported. Single-case research has also been published demonstrating the effectiveness of DBT for adolescents with eating disorders (Safer et al., 2007; Salbach, Klinkowski, Pfeiffer, Lehmkuhl, & Korte, 2007).

Research is beginning to emerge on the use of DBT with adolescents displaying a wide array of issues. This body of research, however, has focused on cases where the full suite of DBT, as adapted for adolescents, has been administered. As mentioned previously, there is a need for research which investigates a less time and resource-intensive version of DBT, so that it may be implemented in settings with less staff and fewer financial resources than a traditional hospital or outpatient clinic. The following section is a review of the few published studies that have focused on the group skills training component of the DBT model as the primary mode of treatment.

Dialectical Behavior Therapy
Group Skills Training

One of the more serious symptoms of BPD and borderline features is self-harming. Self-harming is a serious and common behavior displayed by adolescents in many countries (Mehlum et al., 2014). In fact, between 5% to 10% of adolescents report self-harming at least once within the last year, and only 10% to 20% of them receive any treatment (Mehlum et al., 2014). Self-harming, combined with other borderline features such as marked impulsivity and chronic feelings of emptiness, culminate to make suicide the second-leading cause of death (after accidents) for adolescents in the United States according to the Centers for Disease Control

Prevention (2013). Because self-harming and suicide are so prevalent during adolescence, and so undertreated, it is prudent to find an effective strategy for preventing these behaviors, one which teaches adolescents alternative coping skills to self-harming and taking their own lives. This treatment needs to be one than can be implemented easily and efficiently in a variety of settings, including school settings where many adolescents spend much of their time.

While DBT has been established as an effective treatment for borderline features such as self-harming and suicidal ideation/attempts, the individual therapy component is like any other psychotherapy, in that it requires highly trained therapists to administer the treatment and involves disclosing traumatic and confidential personal information during sessions. For this reason, the individual therapy component of DBT is not conducive to delivery in a school setting. The group skills training component of DBT, however, is executed much more like a class, in which skills are taught and practiced, and while it requires a trained practitioner to facilitate the group, the emphasis is directed more toward education and skill building. Specifically, group skills training involves learning and practicing every skill that is included in the DBT model.

There are only a few studies that have focused on the effectiveness of the group skills training component as the primary treatment modality where setting or time constraints did not allow for the full implementation of DBT. In one such study, Katz, Cox, Gunasekara, and Miller (2004) evaluated the use of the condensed model of DBT with adolescents in an inpatient setting. Adolescents were treated over the course of two weeks with either DBT or treatment as usual. A total of 66 participants, who had been admitted to the inpatient unit because of a suicide attempt or suicidal

ideation, attended five sessions each week of DBT group skills training and twice weekly sessions of individual therapy or treatment as usual for two weeks before discharge. Participants were evaluated at discharge and then were all referred to outpatient community treatment for one year and re-evaluated at the one-year mark. Immediately following the shortened two-week treatment, the outcomes for the individuals receiving DBT was significantly better than for those in the treatment as usual condition in relation to reducing NSSI and increasing treatment adherence, including medication compliance. At the one-year follow-up, participants in both treatment groups showed a reduction in suicidal ideation, NSSI, and depressive symptoms; though the effect sizes for the DBT group were greater, there was no statistically significant difference (Katz et al., 2004). The findings of this study, while focusing on inpatient participants, provided preliminary evidence for how DBT can work in a very short treatment period of only two weeks and with the primary form of treatment as the group skills therapy (10 sessions) and very little focus placed on individual therapy (only two sessions).

Another study utilized DBT skills group as the sole mode of treatment for adolescents with externalizing disorders who were in a juvenile detention center (Trupin et al., 2002). Participants were 90 incarcerated female juvenile offenders who were split into three groups. One group resided in the mental health ward because they exhibited higher degrees of internalizing and externalizing disorders than the general population at the center; this group received DBT group skills training from therapists who had received the 80 hours of DBT "gold standard training." The second group was in the general population but received DBT group skills training from therapists who had been trained for only 16 hours in a two-day DBT class. The third group was

in the general population and received treatment as usual from therapists not trained in DBT. Results illustrated that adolescents in the mental health unit showed a significant reduction in behavior problems as compared to those in the general population, indicating that group skills training alone could be effective. However, the difference in the training levels of the therapists administering the therapy may have played a role in the results as well (Trupin et al., 2002). More research is needed using DBT group skills training as the single therapeutic modality in a non-clinical setting, in order to judge its effectiveness as well as the feasibility of delivering it in non-clinical or residential settings.

More recently, Nelson-Gray et al. (2006) conducted a study utilizing DBT group skills therapy with non-suicidal adolescents diagnosed with oppositional defiant disorder. Because many symptoms of oppositional defiant disorder are similar to borderline features (e.g., frequently arguing with adults or authority figures, being easily annoyed by others, and having difficulty regulating emotions), it was hypothesized that DBT would be useful for this population as well. This study involved no other type of therapy besides once-weekly group skills training and did not include family members in the sessions, as has typically been part of treatment implementation for adolescents (Nelson–Gray et al., 2006). After 16 weeks of treatment, 32 of the original 54 participants had completed the therapy and showed marked decreases in oppositional defiant disorder symptoms and externalizing behaviors. The parents of the participants also reported decreases in their children's depressive symptoms and increases in their positive behaviors. There was a fairly high level of attrition in this study, but those participants who did remain throughout the duration of treatment showed improvements, even with only one component of the

DBT model in place. This, along with the results from the previous two studies reviewed, seems to lend preliminary support to the use of DBT group skills training as a method for reducing self-harming and other maladaptive behaviors in an adolescent population.

Although the research on the full DBT model has illustrated its efficacy in both adult and adolescent populations in reducing a number of psychopathologies (self-harming, suicide, depression, externalizing behaviors, and eating disorders), comprehensive application of DBT is expensive and time intensive (Groves et al., 2012). The current study aimed to measure the effectiveness of DBT group skills training in reducing distressing symptoms among adolescent females displaying borderline features and increasing their coping skills. If DBT-based group skills training could effectively reduce these concerning behaviors, it could be argued that the group skills training portion of the therapy model may be delivered on its own, placing it within reach for many more low-resource agencies to implement. The second aim of this study was to pilot the application of DBT group skills training in a traditional school environment. Because school settings are highly in need of effective interventions for emotional and behavior problems, but often lack the time, staff, or financial resources to run clinically tested therapies, DBT group skills training could be a major asset to the educational community. If this therapy proved to be effective and could be seamlessly implemented in a school environment, it may be a viable treatment approach for school psychologists and social workers providing services in high schools across the country.

CHAPTER III

METHODOLOGY

This study examined the application of a 12-week dialectical behavior therapy (DBT) based skills group delivered in a school setting to six adolescent females who displayed borderline personality disorder (BPD) features. This chapter includes an overview of the participants, the operational definitions as measured by each assessment, and the method used to measure each of the hypotheses. It also outlines an in-depth illustration of procedures used for the intervention and data analysis methods that were employed. The study utilized a single-case design to measure outcome variables related to distressing symptoms, coping skills, and displays of borderline features.

Participants

All participants were students attending the high school where the researcher was a school psychology intern and were between the ages of 14 and 17 years old. During the first semester of the academic year, the researcher e-mailed the mental health staff (e.g., school counselor and school social workers) in the building, making them aware that a psychoeducational group, designed to address certain skills, would be conducted during the school year. This e-mail encouraged recipients to refer students who exhibited certain patterns of behavior for potential inclusion in the group (see Appendix A). When students were referred to the school psychology

intern/researcher, the intern described the group to adolescents and the kinds of problems the group was meant to help. If the individual expressed interest, her parent was contacted for permission and completion of a full screening was implemented (see pre-screening form, Appendix B, and screening interview form, Appendix C). Because the population was considered to be vulnerable (minors), full disclosure of the study procedures were given to the students and their parents before obtaining parental consent (see Appendix D) and minor assent (see Appendix E) for the study. Both forms of permission were gained before the student was fully screened for inclusion in the group. Of the 12 students who were referred, two of them did not express interest in the group, four of the 12 did not return the paperwork granting parent permission, and the remaining six who expressed interest and returned the necessary forms were retained for participation in the group.

Only females were included in the study as the rate for self-harming and suicide attempts in females greatly outnumbers males (Sornberger, Heath, Toste, & McLouth, 2012). Though males also display these distressing behaviors, and also need treatment, the founders of DBT for adults (Linehan, 1993) and adolescents (Rathus & Miller, 2002) recommend separating groups by gender, especially when dealing with adolescent populations. In order to reduce attention seeking and distracting behaviors that adolescents can display when in the company of another gender, only one gender (females) was identified as the participants for this study. Six participants was considered an adequate sample and was consistent with the guidelines of single-case research where five participants is considered adequate to discuss generalizability of findings (Flyvbjerg, 2006; Horner et al., 2005).

Below are vignettes describing the six participants who completed this study. Pseudonyms were chosen by the participants and were used to protect their confidentiality. The information presented below was drawn from the screening interviews conducted with each participant.

Participant 1: Gail

Gail was a 16-year-old sophomore who was referred to the group by the school social worker for problems with school truancy, depression, and self-harm. At the time when she was screened for group inclusion, Gail had been absent from 101 class periods (out of a possible 420 in the first semester of the school year alone). She reported that her depression was causing her to feel unmotivated to attend school or complete coursework, and that loneliness and familial conflict were the two primary factors in her depression. Gail reported that she had been self-harming since seventh grade and self-harmed most recently around Thanksgiving (two months before the start of group). She had never been hospitalized for psychiatric reasons but reported that she has had a plan to commit suicide, but has not executed it. Gail was very involved in theater and loved acting, stage management, and was even doing the lighting production for the spring musical this year.

Participant 2: Sandra

Sandra was a 14-year-old freshman who was referred to group by the school social worker after a week-long inpatient hospitalization for suicidal ideation. She expressed strong feelings of depression, hopelessness, and low self-worth. She was the only group member who had never self-harmed by cutting but reported hitting herself in the head when she feels the urge to self-harm. Sandra had an older brother who had an autism diagnosis, and she reported extreme difficulty living and getting along with

her brother. Furthermore, she described struggling with feelings of inadequacy because her brother required so much of her mother's attention, and she felt as though she is invisible in her home. Sandra was an extremely talented artist and loved to draw, paint, and take photographs. She wanted to be an art therapist when she grew up.

Participant 3: Blue

Blue was a 16-year-old sophomore. Blue was recommended for group by the school social worker after two hospitalizations for suicidality in the same semester. Blue was struggling with depression, low self-worth, and self-harming even more now than she had in the past. She recently had to move into her father's home because her mother went to prison. Blue was confused about the feelings she should have towards her incarcerated mother, as her father's family told Blue that her mother was a bad person. However, before the imprisonment, Blue's mother was her sole caregiver, and she had not even seen her father in five years. At the start of group, Blue was struggling with feeling like an outsider in her new home with her father and her father's parents whom she barely knew. Blue loved to express herself via writing, and wrote poetry daily which she enjoys sharing with her peers. It is important to note that Blue suffered a horrible family tragedy during the seventh week of the intervention, causing her to miss weeks 8, 9, and 10 of the group. She did return to group at the end of week 11. Therefore, her results should be interpreted with caution as Blue missed almost four weeks of a 12-week treatment.

Participant 4: Ivy

Ivy was a 16-year old junior. She was recommended for group by her guidance counselor due to her history with inpatient hospitalizations for suicidality and self-

harm. At the start of group, Ivy had been hospitalized nine times for psychiatric reasons. Ivy's somatization was so severe that she was having non-epileptic psychogenic seizures and was forced to wear a helmet and take the elevator at school to avoid a traumatic brain injury from a seizure at school. Ivy complained that her relationship with her mother was too intertwined and co-dependent. She believed she could not take her own space and be her own person. Ivy's father was not in her life, and this was very disappointing to her. Ivy was extremely bright, enrolled in all advanced placement courses, and she admitted she was perfectionistic about getting perfect grades and maintaining high academic achievement. Ivy wanted to be an actress when she grew up.

Participant 5: Bridget

Bridget was a 16-year-old junior. Bridget was referred to group by her guidance counselor to whom she had disclosed self-harming behavior and a history of abuse by her stepbrother. Bridget reported strong feelings of depression and suicidality and feelings of low self-worth after she reported her stepbrother's abuse to her father, and her father accused her of lying. Since the abuse incident, Bridget felt as though her family was against her and that they continue to favor her stepbrother over her. Bridget was very involved in band and orchestra and played both the trombone and the viola. She said music was what kept her going, and she wanted to be a music teacher when she grew up.

Participant 6: Scarlet

Scarlet was a 16-year-old sophomore who was referred to group by her guidance counselor to whom she had disclosed self-harming behavior. Scarlet struggled with depression, anger, and low self-esteem. Scarlet's mother passed away

when she was younger, and she reported feelings of unresolved guilt around the circumstances of her mother's death. Scarlet also identified as a lesbian and reported that her father (her sole caregiver) was "very homophobic." Scarlet also explained that both she and her father have "anger issues" which leads to a lot of chaos and disagreement at home. Scarlet was also very involved in theater and choir and wanted to join the Marines when she graduated.

Instruments

A combination of formal, standardized instruments and less formal checklists and self-report data were used to assess change in participants over the course of this study. Four standardized instruments were utilized to collect data at pre- and post-treatment intervals (as well as every other week for three of the four instruments) on outcomes including distressing symptoms and borderline features: the Millon Adolescent Clinical Inventory (MACI) (Millon, 2006), the DBT–Ways of Coping Checklist (DBT–WCCL) (Neacsiu, Rizvi, Vitaliano, Lynch, & Linehan, 2010), the Beck Self-Concept Inventory for Youth (BSCI–Y) (Beck, 2001), and the Beck Hopelessness Scale (BHS) (Beck & Steer, 1993). Additionally, one informal instrument titled the self-harming questionnaire (see Appendix F)—a self-report of self-harming thoughts and actions—was collected as pre- and post-data as well. Progress-monitoring data were collected on a rotating bi-weekly basis as well. The DBT–WCCL was collected on even weeks of the intervention, the BHS and BSCI–Y were collected on odd weeks of the intervention, and the self–harming questionnaire was collected every week during group sessions. Prior to the start of group, a brief demographic questionnaire asking about current and previous mental health symptoms

and treatment was administered. That information was summarized above in the participant vignettes.

Millon Adolescent Clinical Inventory

The MACI is a 160-item self-report questionnaire that asks adolescents to rate statements about themselves as true or false. It has 12 personality scales, which were based on Millon's (1969) personality theory and parallel the criteria for personality disorder diagnosis as outlined in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (Murrie & Cornell, 2000). The MACI also provides eight scales, which represent concerns that might be distressing for adolescents such as identity diffusion and seven scales, which represent clinical syndromes like eating dysfunction. On the MACI, raw scores are converted into base rate scores between 0 and 115. A base rate score above 75 indicates that a characteristic is present in the adolescent, and a score about 85 indicates that the characteristic is clinically prominent (Millon, 2006). The MACI also controls for a desirability affect, whereby a participant may want to seem healthier than they truly are for the sake of looking good to whomever is evaluating the test results. The desirability scale is counted and given a raw score. Then, the raw score from the debasement scale score (a scale which shows the degree to which participants want to look more impacted than they truly are) is subtracted from the desirability raw score; the resulting sum is equated into another number in a table in the MACI manual, and this number is then subtracted from the base rate scale scores to get a true score. Thus participants' tendency to make themselves look better or worse to the examiner is controlled for in this survey. The MACI was normed on a clinical sample of 579 adolescents ages 12 to 17 and two cross-validation samples of

139 and 194 adolescents in the same age range. For this study, only three of the clinical syndromes scales and one personality pattern scale were used, although the entire instrument was administered. The three clinical syndrome scales that were used included the depressive affect (to measure depression symptoms), anxious feelings (to measure anxiety), and suicidal tendency (to measure suicidality). The personality pattern scale that was used was the borderline tendency (to measure traits of borderline personality disorder).

The depressive affect scale contains 33 items and was tested on a normative sample, 572 participants, ages 13 to 19 years old, and found to have an internal consistency coefficient of .89; it was tested again with two combined cross-validation samples, and the internal consistency coefficient for those samples was equally strong at .88 (Millon, 2006). The test-retest reliability for the depressive affect scale after a seven-day lapse between testing was .81. Thus this scale posts psychometrically valid numbers for internal consistency and test-retest reliability. The anxious feelings scale contains 42 items and had a slightly lower coefficient for internal consistency with the normative sample of .75, a coefficient with the combined cross-validation sample of .75, and a test-retest reliability coefficient of .85 (Millon, 2006). This scale shows sufficient psychometric properties to be utilized for research. The suicidal tendency scale consists of 25 items and has an internal consistency coefficient for the normative sample of .87; for the cross-validation sample the coefficient was .87 as well, and the test-retest reliability was .91 (Millon, 2006). Therefore, the suicidal tendency scale also shows psychometric validity that supports its use with this population. Finally, the borderline tendency scale consists of 21 items and has an internal consistency of .86 when used with the normative sample, an internal consistency of .86 when using the

cross-validation samples, and a test-retest reliability coefficient of .92 (Millon, 2006). All four scales taken from the MACI for use in this study showed sufficient psychometric properties for use in research.

Dialectical Behavior Therapy–Ways of Coping Checklist

Linehan and her colleagues wanted to find a way to test if the increased use of DBT skills was a mechanism of change in the DBT therapeutic process, but at that time there was not a measure to gauge the use of these specific skills. As a solution, they adapted a common coping skills measure called the Revised Ways of Coping Checklist (Vitaliano, Russo, Carr, Maiuro, & Becker, 1985) to create the DBT–WCCL (Neacsiu et al., 2010). The Revised Ways of Coping Checklist is a self-report survey which asks questions about one's negative and positive coping mechanisms such as focusing on the problem and self-blaming versus seeking social support and distracting oneself from distress. Though this measure is adequate for measuring typical coping skills, it was not considered specific enough for the skills taught in DBT, so the measure was modified to include items about distress tolerance skills, mindfulness skills, and reducing vulnerability to emotion (Neacsiu et al., 2010).

As part of the development process, the researchers identified 60 experts in the field who were teaching DBT skills and asked them to rate 75 new items as to whether they accurately addressed DBT skills. Items were excluded based on the percentage of agreement among experts as to whether the item addressed a DBT skill, with 70% agreement being the cut-off amount. From this procedure, 21 items were dropped from the survey. This resulted in a survey with 59 total questions that can be answered by circling numbers corresponding to a Likert-type scale (0–*never used,* 1–*rarely used,*

2–*sometimes used,* and 3–*regularly used*). The survey is considered appropriate for ages 8 to adult. Scores on the DBT–WCCL are determined by simply adding together scores on a Likert-type rating scale from 0–*never used* to 3–*often used* to get a total score for the positive coping skills subscale, and then the same procedure is followed to obtain a raw score for the negative coping skills subscale. The scale is available for download on the creator's website, but there is no manual providing means or standard deviations for the scores on these subscales. Thus for this study, scores on the positive coping skills subscale were simply added together for all 38 items that endorsed positive skills (possible range 0 to 114), and these total raw scores were tracked bi-weekly to determine whether participants reported using a great number of positive coping skills as group progressed. There are 21 negative coping items with a possible range of 0 to 63. Initially, these items were not going to be used, but were included in a post-hoc analysis in Chapter IV.

For the DBT skills subscales, the test-retest reliability was between .66 to .73. Criterion validity was measured using the data from Cohort 4, a group of participants, aged 18 to 60, in a study where one group received DBT with skills training and one group received DBT without skills training. Scores on the DBT skills subscale were taken from pre-treatment (where there was no significant difference between groups) and at four months into treatment, and it was found that there was a significant difference in mean scores between the group receiving skills training and the group not receiving the training. Additionally, a paired-sample *t*-test revealed a significant improvement in dysfunctional coping skills across both groups at the end of the four-month treatment period (Neacsiu et al., 2010). Thus the DBT–WCCL has been tested for psychometric adequacy and reliability, and validity has been shown with adults.

Although there was no research found supporting its use with an adolescent population, there were not any other instruments that measured coping skills aligned with DBT therapy that had been validated with an adolescent population.

Beck Hopelessness Scale

The BHS is a 20-item survey that measures the construct of hopelessness as it relates to suicidality. The rater endorses each item as true or false, and the survey is scored by converting each answer into one or zero points according to a template on which items endorse hopelessness and which do not. The minimum score is a zero and the maximum score is 20. A score above a 9 is considered the clinical cutoff indicating that a client is at greater risk for suicide, and scores above a 16 suggest that the rater is severely suicidal (Beck & Steer, 1993). The scale is considered psychometrically sound. Test-retest reliability at six weeks had a coefficient of .66. Internal consistency ratings ranged from .82 to .93 (Beck & Steer, 1993). The correlation between clinically prominent scores on the BHS and suicide attempts was .62. In another study, patients with a score of 6 or higher showed a 90% suicide attempt rate (Beck, Brown, & Steer, 1989). Though originally designed for use with adults, this measure has also been utilized with adolescents and is considered to be reliable and valid with that population as well (Steer, 1988).

Beck Self-Concept Inventory for Youth

The BSCI–Y is one of four youth inventory surveys designed to measure characteristics of mental health in adolescents (Beck, 2001). The BSCI–Y consists of 20 questions that ask adolescents to rate how often they feel a certain way about themselves on a scale from *never* to *always* with *sometimes* and *often* falling in

between. An example of an item on the scale is “I feel smart.” Each item response is scored with a corresponding number with *never* being a 0 and *always* being a 3. Scores are then added together to make a raw score, and the raw score is converted to a T-score based on the normative sample. The mean is represented by a T-Score of 50 and a standard deviation of 10. This measure is considered psychometrically valid. Inter-item correlation had a coefficient of .80 for the two subscales of self-esteem and competency (Runyon, Steer, & Deblinger, 2009). Test-retest reliability had coefficients of over .70 (Beck, 2001).

Self-Harming Questionnaire

The self-harming questionnaire was a simple survey created just for this study, that asked the participants four questions about their self-harming behaviors in the past week. The questions asked: if they thought about harming themselves, if they actually harmed themselves; if yes, how they harmed themselves; and if no, what they did instead of self-harming. The questionnaire was formulated based on what the researcher needed to know for the participant’s safety each week, and the question about what the participants did instead was included as a conversation starter in group about which coping skills participants were using instead of non-suicidal self-injury (NSSI).

Procedures

Prior to recruiting any group participants, permission was obtained from the school district and from the Institutional Review Board at the University of Northern Colorado (see Appendix G). Obtaining permission from the school district required first obtaining approval from the university’s Institutional Review Board, and then, with this permission included, submitting a research proposal to the district’s internal

research committee for approval. Once both permissions were obtained, the school psychology intern was permitted to conduct the study in the high school in which she was currently working.

Screening

Once a referral was made through the recruitment process described above and parental permission had been obtained, the students were screened for inclusion by interviewing with a doctoral level graduate student (the researcher) who was also the facilitator of the treatment groups. The interview included questions about the student's past history in mental health treatment, any past diagnoses, any past instances of NSSI, history of depression and anxiety, and the adolescent's personal desire to participate in the group and willingness to get better (see Appendix E). All of these questions were included as they are considered standard practice in any mental health intake form because a person's history of mental health symptoms and treatment is highly relevant for determining the course of future treatment. It was also important, for the sake of the students' safety, to know whether they had a history of depression, suicidal ideation, or suicide attempts, as all are known risk factors for future suicide attempts (Brown, Beck, Steer, & Grisham, 2000).

Each potential participant was screened individually in a private office during a non-instructional time in the school day. The baseline screening interview was given only once at intake to determine whether the student qualified for the study and consisted of a 30-minute interview discussing the questions on the interview form. After the interview, the participants also filled out a MACI so that their scores on the borderline tendency scale could be used to determine inclusion in the study. In order to qualify for the study, the student needed to answer yes to self-harming once in the last

six months or having suicidal ideation once in the last six months or she needed to score 75 or greater indicating that the symptoms were present on the borderline tendency scale of the MACI. If the student met either of the above listed criteria for inclusion in the study and expressed a desire to get better through treatment, she was included in the group. Exclusion criteria consisted of the student endorsing a current eating disorder diagnosis or current psychotic symptoms during the baseline screening interview. The rationale for this exclusion criterion was that both eating disorders and psychosis, while they can be improved through DBT, are such serious and specific issues that they should be handled with more intensive treatment plans than this group-only, outpatient study could provide. All six participants who showed interest in the group and obtained parent permission qualified for the group based on the above inclusion criteria. None of the individuals screened exhibited any exclusion criteria, so six were screened and all six were included. Once six individuals were identified, baseline data were collected and the treatment phase began.

Baseline Data

After being identified for inclusion in the group, participants completed three weeks of baseline data collection consisting of once-weekly meetings with the school psychology intern where they filled out a self-harming questionnaire (see Appendix F), a DBT–WCCL, a BHS, and a BSCI–Y. Each of these measures required about five minutes each to complete (for a total of about 20 minutes each session). Collecting three baseline data points for self-harming, coping skills, hopelessness, and self-concept provided necessary pre-intervention comparison points for the single-case research analysis administered during and after the intervention.

Treatment Intervention

Treatment consisted of 12 weeks of DBT-based group skills therapy for adolescents following the manualized treatment published by Rathus and Miller (2015). Once participants had been screened and baseline data had been collected, participants began group skills treatment. Students attended two hours of skills training group each week for 12 weeks as that was the length required to teach the DBT curriculum as outlined in the *DBT Skills Manual for Adolescents* (Rathus & Miller, 2015). The groups were held on Thursday mornings from 8:45 to 10:45 a.m. as that was when the school held a non-academic advisement period for all students; thus the participants could come to group each week without missing class. The group was held in the school psychologist intern/researcher's office, which was large enough to host a table with seven people sitting around it.

The group was facilitated by the researcher who has been trained in the DBT curriculum. Specifically, the principal investigator co-facilitated a DBT group, under supervision, in another facility for the past year. The facilitator also attended a two-day DBT training seminar prior to facilitating the DBT group in this study. Furthermore, the researcher/intern was supervised weekly by a licensed psychologist who worked within the school district. There was a one-week break between weeks 6 and 7 of group when spring break occurred for the district, so there was no school that week.

Sessions took place in the following order: Week 1, Orientation and Mindfulness Skills Module; Week 2, Mindfulness Skills, Week 3, Distress Tolerance Skills Module; Weeks 4 and 5, Walking the Middle Path; Week 7, Mindfulness Skills Module; Weeks 8, 9, and 10, Emotion Regulation Skills Module; and Weeks 11 and

12: Interpersonal Effectiveness Module. Within each session, different skills were taught, but the general content of each session reflected the outline presented in the *DBT Skills Manual for Adolescents* (Rathus & Miller, 2015) and went as follows: Aside from the orientation session, which began with introductions and discussions of confidentiality and treatment goals, every other skills session (weeks 2 through 12) began with a mindfulness exercise, which typically lasted about five minutes. Then, logistical announcements were made and an outline of the session material for that week was given. After this component, the facilitator reviewed the homework that was assigned the previous week with the participants to gauge understanding and retention and provide more practice if necessary. These first three components took up the first hour of group, after which, a 10-minute break was given. After the break, the trainer taught the material on the new skills and theory for the module and assigned a homework exercise to practice the new skill, after which there was a wind-down exercise (typically mindfulness-based). Each week, participant data were collected using the self-harming questionnaire, the DBT–WCCL, the BHS, and the BSCI–Y just before the wind-down exercise, which served as the conclusion to the group session for the week.

The materials needed to run the group included the *DBT Skills Manual for Adolescents* (Rathus & Miller, 2015), binders with DBT materials for each of the group participants, and a private room within the school to conduct the group. The binders with the DBT materials included the worksheets that provided an overview of the lessons that students would be learning in group. The participants were encouraged to take their binders home with them in order to remember and practice the skills learned in between group meetings. All assessment data were kept in a locked file

cabinet within the school psychology intern's office to maintain confidentiality of participants' information.

Data Collection

As a part of the data collection process, participants were asked to fill out a minor assent form which included a space to choose a participant identification number which was then utilized for data collection instead of a name for the remainder of the study. These numbers were later converted to names chosen by the participants to utilize in writing the narrative of the study. Once participants had been screened and had agreed to participate in the group and research study, baseline data were collected; for three weeks before the beginning of treatment, participants filled out all four surveys each week (DBT–WCCL, BHS, BSCI–Y, and self-harming questionnaire). Once the treatment started, each week the participants alternated filling out either the DBT–WCCL on even weeks or the BHS and the BSCI–Y together on odd weeks to track their progress with hopelessness, self-concept, and utilization of coping skills. The self-harming questionnaire was the only measure that was collected every week in order to monitor the safety of the participants on a weekly basis. These surveys required about five minutes each to complete and were filled out at the end of each group session and collected by the researcher.

Once the 12 weeks of group were completed, there was a three-week period where no data were collected. At the end of the three-week post-treatment phase, follow-up data were collected using the MACI, DBT–WCCL, BHS, BSCI–Y, and self-harming questionnaire to see if there were any lasting treatment effects. A summary of the data collection timeline is provided in Table 1.

Table 1

Timeline of Data Collection Procedures

Pre-intervention	Baseline (3 weeks)	Intervention (12 weeks)	Post-intervention (3 weeks after)
Intake Interview	BHS	BHS (odd weeks)	BHS
MACI	BSCI–Y	BSCI–Y (odd weeks)	BSCI–Y
	DBT–WCCL	DBT–WCCL (even weeks)	DBT–WCCL
	SHQ	SHQ (every week)	SHQ
			MACI

Note. MACI = Millon Adolescent Clinical Inventory, BHS = Beck Hopelessness Scale, BSCI–Y = Beck Self-Concept Inventory for Youth, DBT–WCCL = Dialectical Behavior Therapy–Ways of Coping Checklist, SHQ = self-harming questionnaire.

Data Analysis

After all data were collected, a single-case analysis was conducted for each of the individual participants in order to test the following hypotheses:

H1 The group skills portion of dialectical behavior therapy delivered on its own will effectively reduce distressing symptoms in adolescents with borderline features, specifically: (a) Adolescent females who participate in group skills therapy will demonstrate lower levels of depressive symptoms, (b) adolescent females who participate in group skills therapy will demonstrate lower levels of anxiety symptoms, and (c) adolescent females who participate in group skills therapy will demonstrate lower levels of suicidality and hopelessness.

H2 Adolescent females who participate in a dialectical behavior therapy skills group will demonstrate an increase in their coping skills.

H3 Adolescent females who participate in a dialectical behavior therapy skills group will demonstrate fewer features of borderline personality

> disorder, specifically: (a) Adolescent females who participate in group skills therapy will demonstrate lower levels of non-suicidal self-harming, (b) adolescent females who participate in group skills therapy will demonstrate increased levels of self-concept, and (c) adolescent females who participate in group skills therapy will demonstrate lower levels of borderline personality disorder traits.

For Hypothesis H1, parts a–c, the standard scores on the corresponding subscales of the MACI (depressive affect, anxious feelings, and suicidal tendency) were compared from pre- and post-test administrations to determine whether there was a difference in the scores, with a significant difference representing a standard score falling below the clinical cutoff point of the subscale. In other words, if the participant had reduced her score to be below the clinically prominent cutoff score of an 85, she was considered to have returned to normal functioning from the pre- to post-intervention administration, and it was considered a significant improvement in symptoms (Millon, 1993). Additionally, Hypothesis H1, part c, was answered using the bi-weekly progress-monitoring data from the BHS, as hopelessness is highly correlated with suicidality. These progress-monitoring data were analyzed using three different types of single-subject statistics including the visual analysis procedure explained below.

To test Hypothesis H2 and Hypothesis H3, part b, the data points from the bi-weekly DBT–WCCL scores were graphed for each participant, and a visual analysis for basic effects and phase change was conducted. Visual analysis is the most widely accepted method of single-case analysis to date (Lane & Gast, 2014). It is considered the most adequate method of assessing changes due to introduction of an independent variable, and the goal is to establish experimental control for studies that do not have random assignment or control groups (Kazdin, 2011). Because there is too little data to

meet the normal assumptions necessary for statistical analysis, visual analysis is the most appropriate type of analysis for single-case data (Kazdin, 2011). In order to conduct visual analysis, the data for all of the participants is graphed together, by variable, and changes across phases and across participants can be analyzed together in terms of level, trend, and variability. Level is analyzed by taking the median data point from the baseline data and drawing a line through that data and then drawing a line through the median data point in the intervention phase and comparing if there is a visually obvious difference between the two lines: does the intervention line fall higher or lower than the baseline line on the vertical axis? Trend is analyzed by creating a line of best fit for the baseline data and a second line of best fit for the intervention data and comparing the direction of the two lines and their slopes (just by looking at them). Relevant questions for trend analysis include: Is the intervention line sloping in a positive or negative direction? Is the baseline sloping in a positive or negative direction? How do these directions compare? Does the intervention line possess a more severe (closer to positive one or negative one) slope than the baseline line does? Variability is analyzed by looking at the data points in both phases relative to their respective lines of best fit and assessing how many data points are close to the line of best fit and how far away the outliers are. Assumptions about the differences in baseline and intervention phases are made based on the answers to the aforementioned questions.

In addition, a method called the percentage of non-overlapping data was also calculated for all variables measured with progress monitoring. Percentage of non-overlapping data is the most commonly used method of calculating effect sizes for single-case data (Parker, Vannest, & Davis, 2011). Percentage of non-overlapping data

also correlates well with visual judgments, and so by calculating it, one can avoid the redundancy of also calculating trend lines (Parker et al., 2011). Percentage of non-overlapping data is calculated by taking the highest (if you want the variable to increase) or lowest (if you want the variable to decrease) baseline data point and counting the number of intervention data points that are above that point (non-overlapping). Then, the proportion of non-overlapping to total number of intervention points is calculated in order to see the ratio of improved scores from baseline through intervention. Any result with more than 70% non-overlapping data is considered at least moderately effective, and anything more than 50% non-overlapping data is considered to be minimally effective (Parker et al., 2011). Beyond visual analysis and percentage of non-overlapping data calculations, scores were graphed for each participant and a test for statistical significance conducted using the two-standard deviation band method of single-case analysis. This method has the advantage of "being sensitive to changes in variability across phases of a single-subject design" (Nourbakhsh & Ottenbacher, 1994, p. 770). The two-standard deviation band is derived by calculating the mean of the baseline data points and the standard deviation for the baseline data points and then drawing two horizontal lines on the graph, one that is two standard deviations above the mean, and one that is two standard deviations below the mean. A significant change in performance is said to have occurred if "at least two consecutive data points in the treatment phase fall outside the two-standard deviation range" (Nourbakhsh & Ottenbacher, 1994, p. 770). The two-standard deviation band is based on the assumption that the data set forms a normal distribution; the data in this study violates that assumption, which is why the band was used in conjunction with methods of visual analysis. The logic in choosing all three of

these methods for analyzing the data was that the standard single-case method of visual analysis would show trends and themes in the data and would not violate statistical assumptions, while the two-standard deviation band could substantiate any results shown in the visual analysis with a statistical result for comparison, and the percentage of non-overlapping data shows effect size for either analysis.

Testing Hypothesis H3, part a, was completed by simply looking at and reporting the results of the self-harming questionnaire. To answer Hypothesis H3, part c, the pre- and post-test scores from the borderline tendency subscale on the MACI were collected and interpreted in the same manner as Hypothesis H1 (i.e., standard score below clinical cutoff).

CHAPTER IV

RESULTS

This study investigated the effectiveness of a 12-week dialectical behavior therapy (DBT) based group skills training model in reducing distressing symptoms (e.g., depression, anxiety, and suicidal behaviors) and increasing positive coping among six adolescent females with borderline features. Each participant was treated as a single case, and the results of the treatment were analyzed on an individual basis.

Results for Pre- and Post-Test Treatment Data

Hypothesis H1 in this study was related to the degree to which participants would experience a decrease in their distressing symptoms (i.e., anxiety, depression, or suicidal thoughts/behaviors). Pre- and post-test data from the depressive affect, anxious feelings, and suicidal tendency scales on the Millon Adolescent Clinical Inventory (MACI) were examined to determine if the participants experienced a significant improvement in these symptoms. Hypothesis H3 in this study also asked whether or not participants would endorse traits of borderline personality disorder (BPD) to a lesser degree after the intervention than they did prior to treatment. Pre- and post-intervention data from the borderline tendency scale on the MACI were examined to answer this question. In interpreting MACI scores, it is important to keep in mind that the median base rate on every scale is 60. Scores at 75 and above indicate that a characteristic is present, and scores of 85 and above indicate the symptom is

clinically prominent (Murrie & Cornell, 2000). For this study, significant improvement is indicated only if the pre-treatment score was 85 or higher and the post-treatment score was below 85. These conditions for improvement were consistent with those established by Jacobson, Roberts, Berns, and McGlinchey, (1999) that if the participant had reduced his or her scores to be below the clinically significant cutoff score of an 85, he or she would be considered to have returned to normal functioning.

Participant 1: Gail

On Gail's pre-treatment administration of the MACI, she earned a base rate score of 94 on the depressive affect scale, indicating a clinically prominent level of depression. Gail's score on the depression index of the MACI at follow-up (three weeks post-treatment) was an 86. In this case, although Gail's depression score was reduced from pre- to post-treatment, the reduction was not considered significant as her post-treatment depression score of 86 was above the clinically significant cutoff of an 85 on the MACI.

Gail's pre- and post-treatment scores as related to anxiety were examined using the anxious feelings scale of the MACI taken pre- and post-intervention. Gail's pre-treatment score on the anxious feelings scale was a 71. This score indicates that although Gail endorsed some anxiety at the time of pre-treatment, it was not clinically prominent. Gail's score on the post-treatment administration of the MACI was a 46. Gail's post-treatment score was well below the cutoff score of 85, which marked significant improvement. Therefore, there was evidence to support the hypothesis that the intervention reduced Gail's anxiety levels.

To determine whether or not Gail experienced lower levels of suicidality pre-, post-, and throughout treatment, her scores on the suicidal tendency scale of the pre- and post-treatment MACI were examined. Her scores on the Beck Hopelessness Scale (BHS) were examined as well and are discussed below in the section on progress-monitoring data. Gail's score on the suicidal tendency scale of the pre-treatment administration of the MACI was a 71. So, suicidality was not considered present for Gail, as it was not above the cutoff score of 75 on the MACI. Her score on the post-treatment administration of the MACI was a 53. This score falls well below the cutoff score of 85, which suggests a significant improvement for this study.

Finally, Gail's score on the borderline tendency scale on the pre-treatment administration of the MACI was 78. Thus her score did not fall above the clinically prominent cutoff score of an 85 on the MACI; however, it was above the cutoff score of 75 for presence in the client. Her score on the post-treatment administration of the MACI was an 84. This score actually shows a slight increase in Gail's BPD symptomology. Therefore, for Gail, there was no evidence to support the hypothesis that her BPD traits were reduced significantly from baseline to post-treatment.

In summary, for Participant 1, Gail, she showed a decrease in her depression scores, but her level of depression was still considered clinically prominent post-treatment. Her anxiety was significantly decreased and her suicidality was lower; remembering that both of these scores were below the clinically prominent level at pre-treatment, this decrease was still considered an improvement. Finally, Gail's endorsement of borderline traits increased slightly from baseline to post-treatment but was still below the clinically prominent level. In other words, there was mixed evidence regarding Gail's level of distressing and BPD symptoms.

Participant 2: Sandra

On Sandra's pre-treatment administration of the MACI, she scored a base rate score of 110 on the depressive affect scale, indicating a clinically prominent level of depression. Sandra's score on the depressive affect scale of the MACI administered post-treatment was a 92. Similar to Gail, although Sandra's depression score was reduced from pre- to post-treatment, the reduction was not considered significant because her post-treatment score of 92 still falls above the clinically significant cutoff of 85 on the MACI.

Sandra's pre-treatment score on the anxious feelings scale was a 107, indicating that anxiety was also a clinically prominent symptom for her at the time of pre-treatment. Sandra's score on the anxious feelings scale of the post-treatment administration of the MACI was a 110. Sandra's raw score was actually exactly the same pre- and post-treatment, but because her score on the desirability scale went up from pre- to post-treatment, the adjustments made to her base rate score were different, resulting in a post-treatment score that appears higher at post-treatment. Clearly, there was no evidence to support the hypothesis that the intervention was successful in reducing Sandra's anxiety levels from pre- to post-treatment.

An examination of whether Sandra experienced lower levels of suicidality from pre- to post-treatment indicated that prior to treatment, Sandra's score on the suicidal tendency scale of the MACI was a 92. This score was well above the clinically prominent cutoff score of an 85 on the MACI. Her score on the post-treatment administration of the MACI was a 56, which falls well below the cutoff. As defined by the parameters of this study, Sandra experienced a significant improvement

in her level of suicidality. Therefore, for Sandra, the intervention seemed to be effective at reducing her suicidality.

Lastly, Sandra's score on the borderline tendency scale of the pre-treatment administration of the MACI was 100. Thus her score fell above the clinically prominent cutoff score and her post-treatment score was 49. This score was well below the cutoff score of 85, indicating a significant improvement. Therefore, for Sandra, there was evidence to support the hypothesis that her BPD traits were reduced significantly from baseline to post-treatment.

In summary, Participant 2, Sandra, showed a decrease in her depression, but her overall level of depression continued to be in the clinically prominent range. Similarly, Sandra's anxiety levels remained the same from pre- to post-treatment, but she showed a significant reduction in her level of suicidality from a clinically prominent level at pre-treatment to below the median at post-treatment. Her MACI scores from pre- and post-treatment on the borderline tendency scale also showed a significant reduction in her endorsement of borderline traits. In other words, there were insufficient data to support the hypothesis that Sandra's depression and anxiety were reduced, but there were sufficient data to support the hypothesis that after 12 weeks of DBT group skills training, Sandra showed lower levels of suicidality and traits of BPD.

Participant 3: Blue

On Blue's pre-treatment administration of the MACI, she scored a base rate score of 113 on the depressive affect scale, which indicated a clinically significant level of depression. At post-treatment, Blue's score was also a 113, indicating no improvement in her indication of depression from baseline to post-treatment. This

finding was understandable given that she suffered the loss of a very close family member during this time.

Blue's anxious feelings index scores on the MACI taken pre- and post-intervention indicated a pre-treatment score of 104 (clinically prominent) and a post-treatment anxious feelings score of 68 at post-treatment. It is hard to know how to interpret Blue's post-treatment anxious feelings score, given the family trauma she had experienced. However, given the parameters established by this study, her post-treatment score on the anxiety scale marks significant improvement.

To examine whether or not Blue experienced lower levels of suicidality pre-, post-, and throughout treatment, her scores on the suicidal tendency index of the pre- and post-treatment MACI were reviewed. Prior to treatment, her suicidal tendency score on the MACI was 83, indicating presence but not clinical prominence. Her post-treatment score was an 81, which was basically unchanged, suggesting no improvement on this particular scale. Again, given the significant family event that occurred during her treatment, this finding was not unexpected.

Blue's score on the borderline tendency scale of the pre-treatment administration of the MACI was 80, indicating that her level of BPD symptoms was present but below the clinically prominent cutoff score of 85. Her score on the post-treatment administration of the MACI was 94 which was above this cutoff. Therefore, for Blue, there was no evidence to support the hypothesis that her BPD traits were reduced significantly from pre- to post-treatment.

In summary, Participant 3, Blue, did not show a decrease in her depression scores, but her ratings of anxiety were significantly reduced from pre- to post-treatment. Her MACI scores on the suicidal tendency scale were not clinically

significant at pre-treatment and were very similar both before and after treatment (83 and 81, respectively). In other words, there were insufficient data to support the hypothesis that Blue's distressing symptoms of depression and suicidality or her experience of borderline traits were reduced from baseline to post-treatment. There was, however, sufficient data to support the hypothesis that after 12 weeks of DBT group skills training, Blue showed improvement in her anxiety levels, despite experiencing a significant family event.

Participant 4: Ivy

On Ivy's pre-treatment administration of the MACI, she scored a 108 on the depressive affect scale, indicating a clinically prominent level of depression, and at post-treatment her depressive affect scale of the MACI remained high with a score of 110. Ivy's raw score was actually the same pre- and post-treatment, but because her score on the desirability scale went up at post-treatment, the adjustments made to her base rate score were different, which is how the base rate score appears higher at post-treatment. Regardless, there was no evidence to support the hypothesis that Ivy's depression levels decreased from baseline to post-treatment.

Ivy's scores from the anxious feelings scale of the MACIs taken pre- and post-intervention were also reviewed. Ivy's pre-treatment score on the anxious feelings scale was a 93, indicating clinically prominent levels of anxiety. This score remained virtually unchanged at post-treatment administration (MACI score of 92). Like her depressive symptoms, there was no evidence to suggest that the intervention was effective in reducing Ivy's anxiety levels.

Ivy's score on the suicidal tendency scale of the pre-treatment administration of the MACI was a 108 (clinically prominent). Her score on the post-treatment

administration of the MACI was a 110. As was true with her depression scores, Ivy's raw scores were actually the same at pre- and post-treatment, but because her score on the desirability scale went up, the adjustments made to her base rate score transferred to a slightly higher score at post-treatment. Thus according to Ivy's scores on the MACI, the intervention was not successful in reducing her suicidality.

Lastly, Ivy's score on the borderline tendency scale of the pre-treatment administration of the MACI was 100. Like her other scores, this one was considered clinically prominent. Her post-treatment score was an 83 which was interpreted as a significant improvement because it was now below the clinical cutoff. Therefore, for Ivy, there is evidence to support the hypothesis that her BPD traits were reduced significantly from baseline to post-treatment.

In summary, Participant 4, Ivy, did not show a decrease in her depression, anxiety, or suicidality levels from pre- to post-treatment. In some ways this was not a surprising outcome as Ivy's level of severity was quite high, and she had a history of nine hospitalizations. There was, however, evidence to support the hypothesis that her endorsement of borderline traits decreased significantly from baseline to post treatment.

Participant 5: Bridget

On Bridget's pre-treatment administration of the MACI, she scored a 111 on the depressive affect scale, indicating a clinically prominent level of depression. Bridget's score on the depression index of the MACI administered three weeks post-treatment was 101. So, while Bridget's reported level of depression did decrease from pre- to post-treatment, it was not reduced enough to be considered a significant improvement in symptoms.

Bridget's pre-treatment score on the anxious feelings scale was also 111. This score indicates that anxiety was a clinically prominent symptom for Bridget at the time of pre-treatment as were her scores at post-treatment (113). Similar to instances with Participants 2 and 4, Bridget's raw score on the anxious feelings index was the same at both administrations of the MACI, but an increase in her score on the desirability index changed the way her base rate score was converted, making the score seem higher at post-treatment. Regardless, there was no evidence to support the hypothesis that Bridget's anxiety improved from pre- to post-treatment.

Finally, Bridget's score on the suicidal tendency scale of the pre-treatment administration of the MACI was 85. Thus her score fell just at the clinically prominent cutoff score. Her score on the post-treatment administration of the MACI was 76, which is considered as present, but below the clinically prominent level on the MACI. Therefore, Bridget's scores on the suicidal tendency scale of the MACI supported the hypothesis that her suicidality decreased from baseline to post-treatment.

Bridget's score on the borderline tendency scale of the pre-treatment administration of the MACI was a 100. Her score on the post-treatment administration of the MACI was a 50. This score falls well below the cutoff score of 85, which determines a significant improvement for this study. Moreover, her score of 50 is below the median, suggesting she is rating herself well into the normal functioning range on this scale. For Bridget, there was evidence to support the hypothesis that her BPD traits were reduced significantly from baseline to post-treatment.

In summary, Participant 5, Bridget, showed a decrease in her depression scores, but the decrease did not fall below a clinically significant level, so there was not evidence to support the hypothesis that the intervention significantly improved

Bridget's depression. Bridget's anxiety levels remained the same from pre- to post-treatment. However, she did show a significant reduction in her level of suicidality and BPD traits from pre- to post-treatment. Therefore, there was no evidence to support the hypothesis that Bridget showed improvement in depression and anxiety symptoms, but there was support for the hypotheses that the intervention would significantly improve her suicidality and endorsement of borderline traits.

Participant 6: Scarlet

On Scarlet's pre-treatment administration of the MACI, she scored a 109 on the depressive affect scale. Scarlet's score on the depressive affect index of the MACI administered three weeks post-treatment was also a 109. Therefore, there was no evidence to support the hypothesis that Scarlet's depressive symptoms decreased from pre- to post-treatment.

Scarlet's pre-treatment score on the anxious feelings scale was also 109, indicating that anxiety was a clinically prominent symptom for her prior to the start of treatment. Scarlet's score on the anxious feelings scale of the post-treatment administration of the MACI was 64. This score falls below the clinically significant cutoff score of an 85, so there was evidence to support the hypothesis that Scarlet's anxiety improved significantly from pre- to post-treatment.

Scarlet's score on the suicidal tendency scale of the pre-treatment administration of the MACI was 109. Her score on the post-treatment administration of the MACI was also a 109, indicating that her experience of suicidality did not improve. Finally, Scarlet's score on the borderline tendency scale of the MACI was 83, indicating the presence of this symptom, but slightly below the clinically prominent level. Her score on the post-treatment administration of the MACI was a

94, which means her score actually increased from pre- to post-treatment. Therefore, for Scarlet, there was no evidence to support the hypothesis that her BPD traits were reduced significantly from pre- to post-treatment.

In summary, Participant 6, Scarlet, did not show a decrease in her depression scores, so there was no evidence to support the hypothesis that the intervention significantly improved Scarlet's depression. However, her anxiety levels were reduced significantly from pre- to post-treatment. Scarlet's suicidality levels did not show any change after treatment, and her score on the borderline tendency scale actually increased. In other words, there was no evidence to support the hypothesis that Scarlet showed improvement in depression, suicidality, or BPD symptoms from pre- to post-treatment, but there was evidence to support the hypothesis that her anxiety level would be significantly improved.

Cross-Case Analysis of Pre- and Post-Treatment Data

The results for all four symptoms measured by pre- and post-test administrations of the MACI were quite mixed. None of the participants showed a significant reduction in the distressing symptom of depression from baseline to post-treatment, so there is no evidence to support the hypothesis that the group skills treatment was effective in reducing depression for these participants. Three out of six participants showed a significant improvement in the distressing symptom of anxiety, although one of those participants was not above the clinically prominent cutoff score at baseline, so there was some evidence to support the hypothesis that anxiety improved from pre- to post-treatment. Three out of six showed significant improvement on the suicidal tendency scale on the MACI, with one participant not above the clinically prominent level at baseline, so there is some evidence to support

the hypothesis that suicidality improved from pre- to post-treatment. Interestingly, although three out of six participants saw significant improvements in their presentation of borderline features, the other three participants reported an increase in their borderline features. In summary, there is some evidence to support the hypothesis that participants saw improvements in the distressing symptoms of BPD from baseline to post-treatment, but the support was inconsistent and merits further discussion in Chapter V. Table 2 summarizes the pre- and post-test results for all six participants.

Table 2

Pre- and Post-Treatment Base Rate Scores on the Depression, Anxiety, Suicidality, and Borderline Personality Disorder Scales of the Millon Adolescent Clinical Inventory

Participants	Depression		Anxiety		Suicidality		Borderline personality disorder	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Gail	94	86	71	46	71	53	78	84
Sandra	110	92	107	110	92	56[a]	100	49[a]
Blue	113	113	104	68[a]	83	81	80	94
Ivy	108	110	93	92	108	110	100	50[a]
Bridget	111	101	111	113	85	76[a]	100	50[a]
Scarlet	109	109	109	64[a]	109	109	83	94

[a]Indicates a significant improvement in scores from a clinically significant score at pre-treatment to a score below the clinically significant cutoff at post-treatment; Gail showed a major decrease in symptoms but did not start out as clinically significant and, therefore, is not marked as such.

Results for Symptoms Measured by Progress Monitoring

Data were also collected utilizing weekly (self-harming questionnaire) and bi-weekly progress-monitoring methods (BHS, Beck Self-Concept Inventory for Youth [BSCI–Y], and Dialectical Behavior Therapy–Ways of Coping Checklist [DBT–WCCL]) to gauge participants' progress from baseline, throughout the 12 weeks of intervention, and through post-treatment. These progress-monitoring data were collected for each participant and were analyzed using single-case methodology. In order to determine experimental control and functional relationship between the intervention and outcomes, visual analysis methods were conducted, and a percentage of non-overlapping data was calculated to measure the magnitude of effects.

Three areas were measured utilizing progress-monitoring methods in order to test hypotheses about participants' decreases in hopelessness, increases in coping skills, and increases in self-concept. Hopelessness was measured utilizing the BHS, coping skill acquisition was measured using the DBT–WCCL, and self-concept was measured using the BSCI–Y.

Scores on the BHS range from 0 to 20 points, with any score above 16 considered to be an indicator of severe suicidality (Beck & Steer, 1993). The DBT–WCCL includes both positive and negative coping skills and asks raters to endorse how often they utilize those skills. There are a total of 38 items that endorse positive coping skills, and participants can rate each skill from 0 to 3 with a 0 meaning that *they did not use that skill at all* and a 3 that *they regularly used the skill*. A score of 1 indicated the *skill was rarely used* and a 2, *sometimes used*. Therefore, the maximum score on the DBT–WCCL positive coping skills subscale is 38 x 3 = 114. The BSCI–Y compares raw scores to a normative population by utilizing T-scores. So, the mean

score on the BSCI–Y is 50, with a standard deviation of 10, meaning any score between 40 and 60 is considered a typical level of self-concept compared to one's peers. A score below 40 indicated a significantly low sense of self-concept. To determine significant improvement on the BSCI–Y, the bi-weekly T-scores were graphed and the two-standard deviation band was calculated as well as a second method called the percentage of non-overlapping data.

Results from the Measurement of Hopelessness

First, the functional relationship between the intervention and the participant's scores on the BHS are examined using Figure 1 for visual analysis. Although hopelessness is not exactly a measure of suicidality, it is one of the primary moderators between depression and suicidal behaviors and was used as an additional method for evaluating potential changes in this construct (Beck, Kovacs, & Weissman, 1975). A visual analysis of these data were conducted using the components of level, trend, and variability. Additionally, the percentage of non-overlapping data and the two-standard deviation method were used to understand trends and significance in these data.

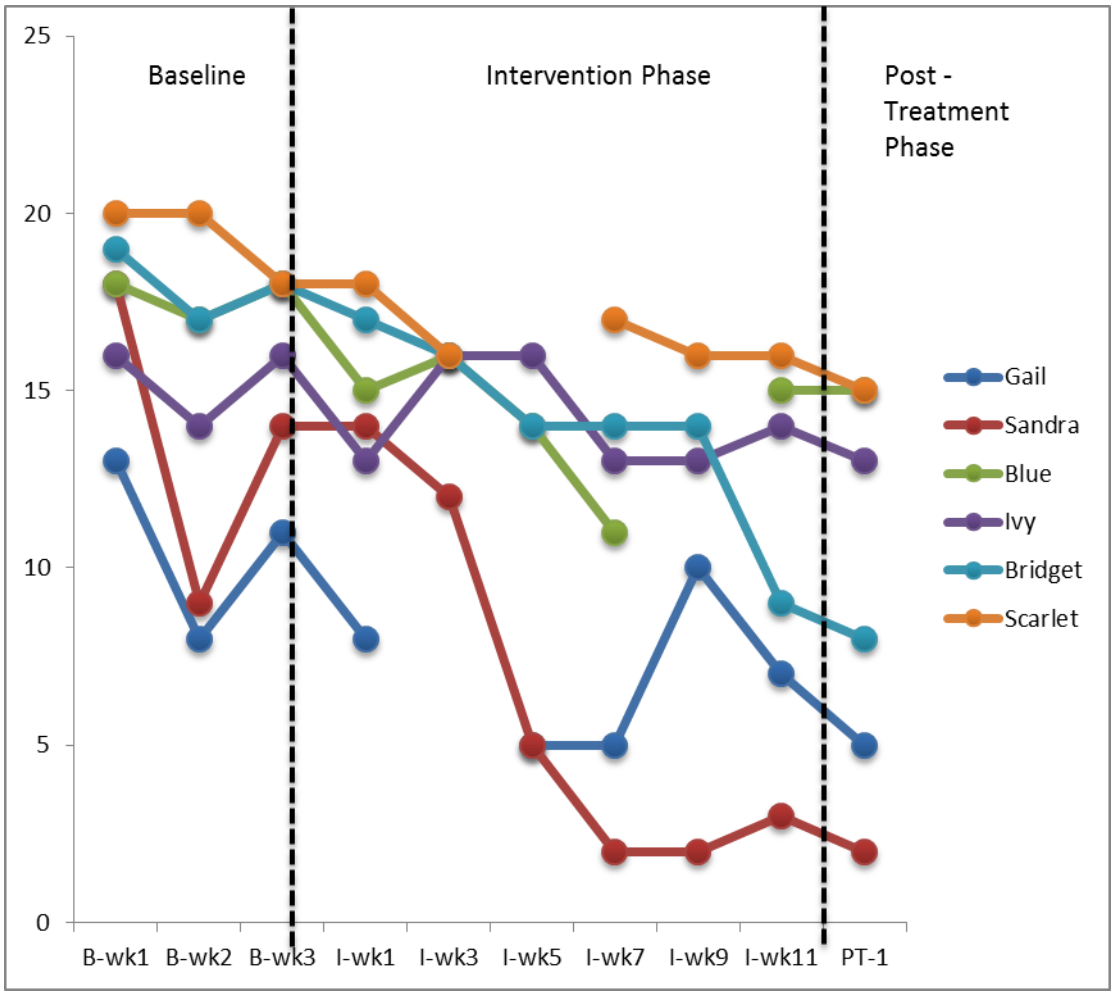

Figure 1. Raw scores on the Beck Hopelessness Scale across all participants. The second dotted line marks a three-week gap between the end of treatment and the single post-treatment data point, in an effort to show maintenance of effects.

Level. To begin, the level differences between the baseline and intervention phases are determined within both baseline and treatment phases by looking at the median data point in the baseline phase and drawing a theoretical line through that data point and then repeating the process with the intervention phase (Lane & Gast, 2014). Ideally, the baseline phase would contain five or more data points, but due to the time constraints of administering the treatment in a single school semester, only

three baseline data points were collected. When looking at the data that falls in the baseline phase on the graph, it can be seen that four out of the six participants, with the exceptions of Sandra and Gail, demonstrate relatively stable baseline scores on the BHS. Thus the change in level between phases can be interpreted more clearly for the four participants with stable baselines and should be interpreted with caution for Sandra and Gail. Visual analysis of the graph shows that there is a difference in level for three of the four participants with stable baselines: Scarlet, Bridget, and Blue. Additionally, even if the lowest data point was taken from the baseline scores of the two participants with less stable baselines, Gail and Sandra, and that was the data point used to determine the level at baseline (i.e., if the most conservative level was used), their levels in the treatment phase were obviously lower at baseline. Thus five out of the six participants showed a change in level between phases, implying lower levels of scores on the BHS from baseline to treatment, and an improvement in levels of hopelessness between the two phases.

Trend. Trend is determined by calculating the slope of the line of best fit for data in a given phase. This is done for both baseline and treatment phases, and the trend lines are compared for direction and steepness of slope (Lane & Gast, 2014). Ideally, the line at baseline has a slope relatively close to zero or is trending in a direction that implies worsening of the behavior, so that this line can be easily contrasted with the steepness or direction of the line during the treatment phase. All six participants showed relatively flat trend lines at baseline (with some variability in the data points). By contrast, five out of the six participants showed a downward trend in their data from the beginning of the treatment phase to the end of treatment and even in the post-treatment phase. The only participant who showed a relatively flat

trend line in the treatment phase was Ivy; this analysis is consistent with the level analysis, which also showed no real change in Ivy's scores between phases. Therefore, the visual analysis of trend provides evidence of a basic effect between phases.

Variability. Finally, the third key component of visual analysis is the assessment of variability in the data between phases. This assessment is accomplished by examining the range of data and its standard deviation. In addition to the variability across all of the data, it is also important to look at outliers and to make sure there are no outliers at the ends of phases, as this would throw off the assessment of levels and trends (Lane & Gast, 2014). As mentioned previously, it would be ideal to have more baseline data points due to the variability of the baseline data for Gail and Sandra, but this was not possible. Although there was some variability, none of the participants ended the baseline phase with an outlier. Five of the six participants had relatively stable intervention phase data, so their level and trend results could be interpreted more reliably. However, Gail had an outlying data point in the middle of her treatment phase, which makes the trend and level less reliable to evaluate. Once more, five out of six participants showed a stable progression of data in the treatment phase, and four out of five showed a downward trend.

Percentage of non-overlapping data. Once a basic effect is established, one way of measuring the magnitude of the effect is to calculate the percentage of non-overlapping data (Lane & Gast, 2014). For example, Gail's lowest baseline score was an 8 on the BHS and there were six intervention data points. From Gail's six progress-monitoring scores, there were four that were below an 8. Calculating percentage of non-overlapping data, 4/6 equals 66.6% of non-overlapping data. As noted, any result with more than 70% non-overlapping data is considered at least moderately effective,

and anything more than 50% non-overlapping data is considered to be minimally effective (Parker et al., 2011). The same process was repeated for the other five participants, and the results are displayed in Table 3.

Table 3

Summary of Results for Percentage of Non-Overlapping Data Across All Participants on the Beck Hopelessness Scale

Participant	Percentage of non-overlapping data	Effect size
Gail	66	Minimally effective
Sandra	71	Moderately effective
Blue	100	Highly effective
Ivy	57	Minimally effective
Bridget	86	Moderately effective
Scarlet	83	Moderately effective

Table 3 shows that the intervention had at least a minimal effect for all six participants. If the results from the visual analysis are taken into account, the percentage of non-overlapping data supports the conclusion that Ivy showed minimal effects, as she showed very little change in trend or level, even with a highly stable data spread. Additionally, Gail's data were highly variable both at baseline and during the treatment, making trend and level difficult to interpret; the percentage of non-overlapping data results indicated that the intervention effect for Gail was only

minimal as well. Thus it can be seen from both visual analysis and calculating the percentage of non-overlapping data that there was a basic effect of the intervention in five out of six participants, and there was at least a moderate effect size in four out of six participants. These results support the hypothesis that participants would experience a decrease in hopelessness from baseline to post-treatment.

Two-standard deviation band. In addition to the visual analysis and percentage of non-overlapping data, a statistical method for calculating significant change in single-case data called the two-standard deviation band was calculated for all six participants. An example of how this analysis was computed is given using Gail's scores on the BHS. Gail's mean baseline score on the BHS was 10.6, and the standard deviation of her baseline data was 2.5. The two-standard deviation band was calculated for Gail's scores on the BHS in the baseline phase, and then the data points in the intervention phase were compared against two standard deviations above and below the mean of the baseline data points. For example, using the 2.5 standard deviation calculated from the baseline data points, the plus two-standard deviation band was placed at 10.6 (mean score) + 2(2.5) = 15.6. The second band was placed at 10.6 – 2(2.5) = 5.6. In this instance, improvement in scores means a decrease in scores because hopelessness is a symptom that the intervention was meant to decrease. The standard for determining statistical significance with the two-standard deviation band method is two or more consecutive scores below the band line in the intervention/post-treatment phase. For this measure, two of Gail's scores fell below the bottom band, so it can be said that there was a statistically significant improvement in Gail's scores on the BHS. However, after this decrease, she experienced a slight increase during weeks 9 and 11. At post-treatment, her reported level of hopelessness from baseline to post-

treatment was below the two standard deviation level. Table 4 displays the results for the two-standard deviation band analysis across all six participants as well as the results for the visual analysis and on the BHS.

Table 4

Summary Analyses of Beck Hopelessness Scale Scores Across All Participants

Participant	Visual analysis	Change[a]	Two-standard deviation band	
Gail	Level	Yes	*M*	10.60
	Trend	Yes	*SD*	2.50
	Variability	Outlier	Significant	Yes
Sandra	Level	Yes	*M*	13.66
	Trend	Yes	*SD*	4.50
	Variability	Stable	Significant	Yes
Blue	Level	Yes	*M*	17.66
	Trend	Yes	*SD*	.57
	Variability	Stable	Significant	Yes
Ivy	Level	No	*M*	15.33
	Trend	No	*SD*	1.15
	Variability	Stable	Significant	No
Bridget	Level	Yes	*M*	18.00
	Trend	Yes	*SD*	1.00
	Variability	Stable	Significant	Yes
Scarlet	Level	Yes	*M*	19.30
	Trend	Yes	*SD*	1.10
	Variability	Stable	Significant	Yes
Total change between phases	Visual analysis	5/6	Statistical analysis	5/6

[a]The words "yes" and "no" in this column indicate whether or not a therapeutic change was noted for this type of analysis, that is, "yes" indicates a therapeutic change took place and "no" indicates that a therapeutic change did not take place.

Summary of Beck Hopelessness Scale results. Using visual analysis, the standard number to show experimental control and to claim a basic effect is a change in three or more participants (Lane & Gast, 2014). Thus because there were five participants who showed changes in level and trend from baseline to treatment phase, and, moreover, all five maintained this change at post-treatment, there is evidence to support that there is a basic effect of treatment on hopelessness from baseline to post-treatment. These findings supported the hypothesis that this intervention would improve self-ratings of hopelessness in participants. Furthermore, results from the calculation of the two-standard deviation band supported the conclusion made from the visual analysis: Five out of six participants (Ivy not included) showed a statistically significant improvement in their scores on the BHS from baseline through treatment phases. Finally, the percentage of non-overlapping data calculations further bolstered these results, showing that four out of six participants showed at least a moderate effect size between baseline and treatment phases, with Ivy showing the smallest effect size of only 57% of non-overlapping data, and Gail, the participant with the outlier in the treatment phase, showing the next smallest effect size of only 66% of non-overlapping data. Essentially, these results support the hypothesis that hopelessness (as a potential indicator of suicidality) would improve in participants over the course of the 12-week treatment.

Results from the Measurement of Coping Skills

Positive coping skills subscale. The results of the progress monitoring using the positive coping skills subscale of the DBT–WCC are displayed across all six participants in Figure 2. These results analyzed participant endorsements of positive

coping strategies across the 12 weeks of the treatment and were expected to show a pattern of increasing use of positive coping.

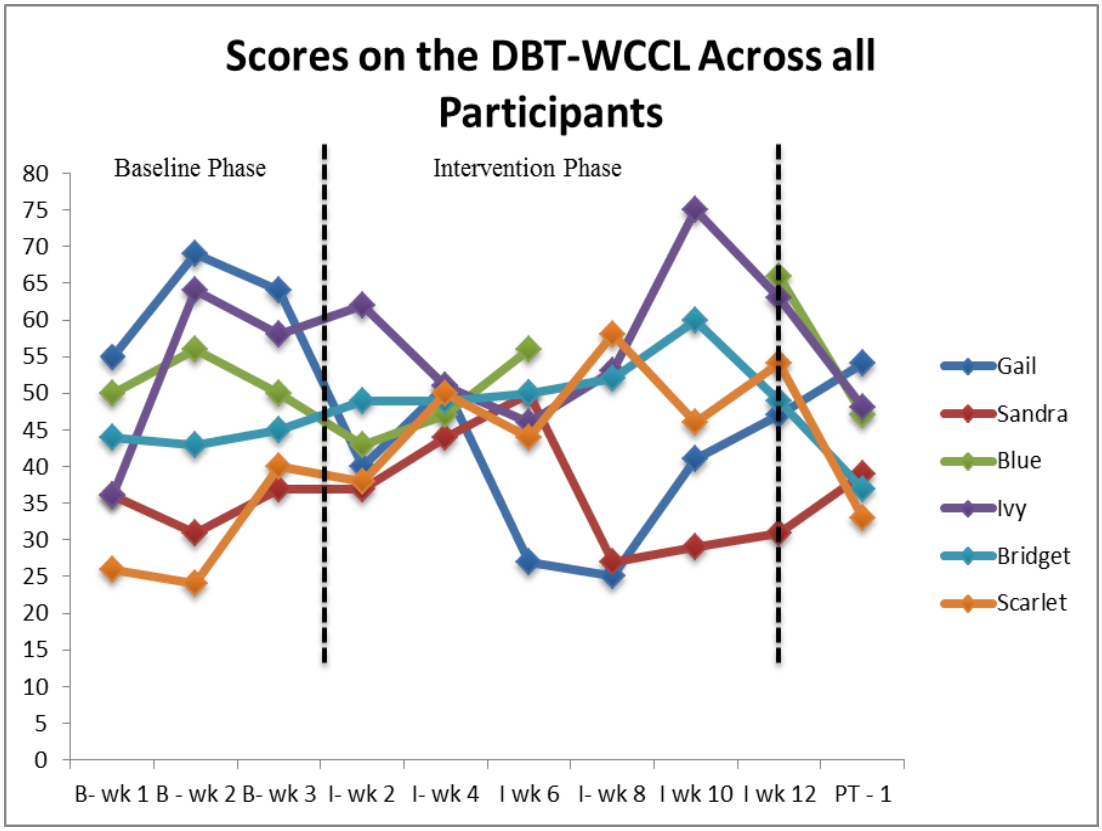

Figure 2. Scores on the Dialectical Behavior Therapy–Ways of Coping Checklist positive coping skills subscale across all participants. The second vertical line marks the three-week gap between the end of treatment and the single post-treatment data point as an indicator of maintenance of effects.

Level. As mentioned before, ideally the baseline phase would contain five or more data points, but due to the time constraints of administering the treatment in a single school semester, only three baseline data points were collected. This is especially important when the data during baseline are highly variable as it was with these participants' ratings on the DBT–WCCL. In viewing the baseline phase on the

graph, it can be seen that only three out of the six participants demonstrated relatively stable baseline scores: Sandra, Bridget, and Blue. Thus the change in level between phases can be interpreted more clearly for those three participants and should be interpreted with caution for Gail, Scarlet, and Ivy. Visual analysis of the graph showed that there was a difference in level in a therapeutic direction (in this case, a positive direction) for two of the six participants: Scarlet and Bridget, and of those two, only Bridget began with a stable baseline. Furthermore, Gail's level decreased, and Blue, Ivy, and Sandra showed very little change from baseline to treatment. Thus it was difficult to claim experimental control for the coping skills variable, as baseline data were not stable, and only two participants showed a level change in a therapeutic direction.

Trend. Three out of six participants showed relatively flat trend lines at baseline (with some variability in the data points), and three out of six participants had trend lines in a positive direction at baseline. This means, for the three whose data were trending in a positive direction before starting treatment (Gail, Ivy, and Scarlet), it is difficult to say that there was a basic effect, because the line was trending positively before the intervention even took place. Because Scarlet's data were trending positively before starting treatment, her positive change in level cannot truly be attributed to a basic effect of the treatment. Blue and Bridget, however, had relatively neutral baseline trend lines, and during treatment their data trends in a positive direction, with steeper slopes than at baseline. Ivy's data were highly variable but her trend line at baseline was already in a steep positive direction and were basically maintained during treatment, so no claim of effect can be made with her data. Both Gail's and Sandra's data did not show linear patterns, but instead trended

downward and then upward again towards the end of treatment. More data would be needed to show a continuous positive trend before a claim could be made regarding the treatment effect. Furthermore, Gail's data showed a positive trend at baseline, so it is difficult to make conclusions that the treatment, and not other factors, resulted in her improvement in coping skills. In summary, only Blue and Bridget showed neutral trend lines during baseline and then a change at the start of treatment to positive trend lines with an obvious change in slope between the two phases. Therefore, the visual analysis of trend provides evidence of a basic effect between phases for only Blue and Bridget, and without at least three participants showing this change, there was not enough evidence for experimental control with this variable.

Variability. At baseline, Sandra, Blue, and Bridget demonstrated stable scores with a small amount of variability (standard deviation of less than 3.5), and Gail, Ivy and Scarlet, showed highly variable baseline data (standard deviation greater than 7). So, it was difficult to attribute any phase changes to treatment effects, because the baseline data for these three participants was highly variable. Therefore, only the data for Sandra, Blue, and Bridget could be interpreted in the treatment phase. Of those three, only Blue and Bridget showed little variability in their treatment phase data. Sandra's data during the treatment phase was highly variable. Thus a treatment effect can only be claimed for two out of six participants, Blue and Bridget. However, Blue missed almost four weeks of group and two weeks of data, so it was difficult to know how she would have scored during those two weeks and whether these data would have been consistent with existing data.

Percentage of non-overlapping data. Percentage of non-overlapping data were calculated for all data points obtained from the DBT–WCCL and are illustrated in Table 5.

Table 5

Percentage of Non-Overlapping Data for the Dialectical Behavior Therapy–Ways of Coping Checklist Across All Participants

Participant	Percentage of non-overlapping data	Effect size
Gail	0	Ineffective
Sandra	42	Ineffective
Blue	20	Ineffective
Ivy	14	Ineffective
Bridget	86	Moderately effective
Scarlet	71	Moderately effective

The results from the effect size calculation were consistent with the results from the visual analysis in that there were very limited results associated with this variable. Of the six participants, only Bridget and Scarlet showed a practical effect size in the difference between their scores at baseline and their scores at intervention and post-treatment. Even so, Scarlet had a standard deviation of eight in her baseline data, and her baseline data were trending upward before starting treatment, so her percentage of non-overlapping data should be interpreted with caution. Truly, a basic

effect can only be claimed for Bridget's data, and no experimental control can be claimed for this variable as less than three participants showed change.

Two-standard deviation band. In addition to the visual analysis and percentage of non-overlapping data, a statistical method for calculating significant change in single-case data called the two-standard deviation band was calculated for all six participants in the same manner that it was calculated for the BHS. All data points in the intervention phase were compared to the figurative band that created a cutoff point two standard deviations above the mean baseline score and two standard deviations below the mean baseline score. For scores on the DBT–WCCL, a significant improvement would mean at least two consecutive data points during the intervention phase would fall above the top band, (as coping skills are something that should increase with treatment). In other words, the results would be expected to be at least two standard deviations higher than the mean baseline data point. The results from the calculations of the two-standard deviation band in comparison with the visual analysis are displayed in Table 6.

Table 6

Comparison of Visual Analysis and Two-Standard Deviation Band Results for the Dialectical Behavior Therapy–Ways of Coping Checklist Across All Participants

Participant	Visual analysis	Change[a]	Two-standard deviation band	
Gail	Level	No	*M*	62.60
	Trend	No	*SD*	7.00
	Variability	Variable	Significant	No
Sandra	Level	No	*M*	34.60
	Trend	No	*SD*	3.20
	Variability	Variable	Significant	Yes
Blue	Level	No	*M*	52.00
	Trend	Yes	*SD*	3.50
	Variability	Stable	Significant	No
Ivy	Level	No	*M*	52.6
	Trend	No	*SD*	14.70
	Variability	Variable	Significant	No
Bridget	Level	Yes	*M*	44.00
	Trend	Yes	*SD*	2.00
	Variability	Stable	Significant	Yes
Scarlet	Level	Yes	*M*	29.66
	Trend	No	*SD*	8.10
	Variability	Variable	Significant	No
Change between phases	Visual analysis	1/6	Statistical analysis	2/6

[a]The words "yes" and "no" in this column indicate whether or not a therapeutic change was noted for this type of analysis, that is, "yes" indicates a therapeutic change took place and "no" indicates that a therapeutic change did not take place.

Summary of the Dialectical Behavior Therapy–Ways of Coping Checklist

results. Only Bridget showed improvement in her coping skills across all three areas

of visual analysis. Blue showed improvement in trend and had little variability in baseline or treatment, but she also missed two weeks of data collection and experienced a significant loss, so it is difficult to make the claim that there was a basic effect when one-third of the treatment was missed. Scarlet showed increases in the level and trend of her data, but these data were already trending positively at baseline, so it was difficult to claim this improvement was due to treatment and not simply maturation or outside factors. The results from the two-standard deviation band calculation supported the findings from the visual analysis. According to the two-standard deviation band, only two participants showed significant improvement between baseline and treatment phases: Sandra and Bridget. Although Sandra's visual analysis was not conclusive because of the variability in her data, the positive trend in her treatment data, before week 8 of the intervention, was significant enough to fall outside of the two-standard deviation band. Coupled with the visual analysis, however, it is difficult to claim that the treatment had a true, lasting effect on Sandra's coping skills when her score began a downward trend again starting in intervention week 8. Therefore, the only results that were truly consistent across all forms of analyses were Bridget's. These results were also congruent with the percentage of non-overlapping data analysis, which indicated that only Bridget and Scarlet showed at least a minimal effect size between baseline and treatment. It is important to remember, though, that Scarlet had a standard deviation of eight in her baseline data, and her baseline data was trending upward before starting treatment, so her percentage of non-overlapping data should be interpreted with caution. Overall, there was no evidence to support the hypothesis that the intervention would improve participants' coping skills.

Post–hoc analysis: Negative coping skills subscale. The above results reflect only the increases in positive coping. After these analyses were completed, the question was raised as to whether participants reported using less negative coping. The results of the progress-monitoring data using the negative coping skills subscale were also graphed and analyzed as a post-hoc analysis. The graph was not included here because, similar to the results from the positive coping skills subscale, these data were so variable that visual analysis could not be reliably performed in order to gain information on phase changes in the data. Similarly, the percentage of non-overlapping data effect sizes could not be interpreted reliably due to the high variability in the data. What was gleaned from this post-hoc analysis, however, was that not only did participants barely show increases in positive coping skills, they also showed negligible decreases in negative coping skills. Thus either the treatment was not effective in improving positive coping skills and decreasing maladaptive ones or this method of measuring coping skills was not adequate for this research and allowed for too much variability in the data to reliability interpret any results.

Results from the Measurement of Self-Concept

The results of the progress-monitoring data collection using the BSCI–Y are displayed across all participants in Figure 3.

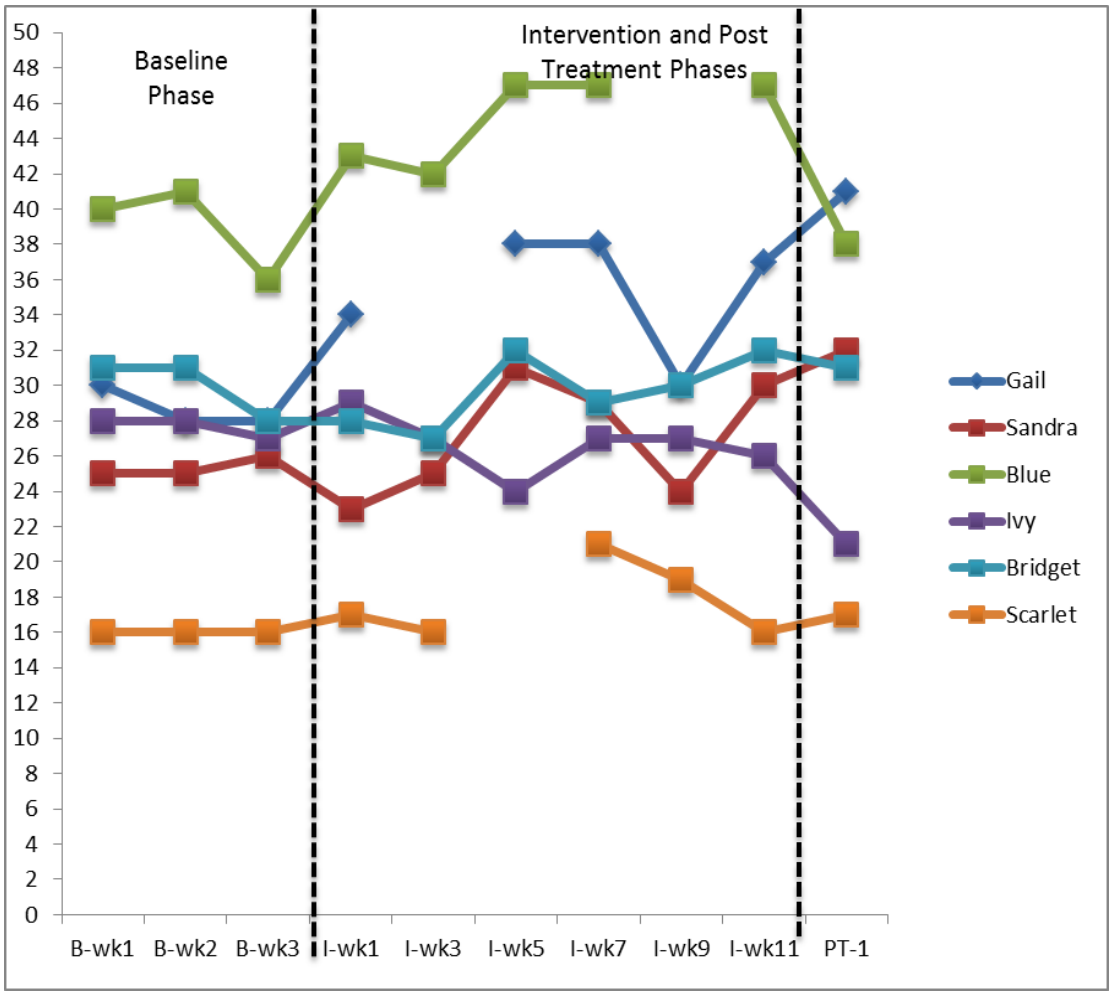

Figure 3. Scores on the Beck Self-Concept Inventory for Youth across all participants. The second vertical line marks the three-week gap between the end of treatment and the single post-treatment data point as an indicator of maintenance of effects.

Level. The data for the scores on the BSCI–Y were generally stable across all six participants in the baseline phase, with the highest standard deviation being Blue's at 2.6. Thus the change in level between phases can be interpreted very clearly for all participants on this measure. Visual analysis of the graph shows that there was a difference in level in a therapeutic direction (in this case, a positive direction) for five of the six participants. The exception was Ivy, who showed very little change from baseline to treatment.

Trend. Four out of six participants, with the exception of Blue and Gail, showed trend lines with slopes close to zero at baseline. Even Blue and Gail had relatively neutral trend lines at baseline, but their third and final baseline data points dipped slightly, causing a slightly negative slope in their baseline trend. Because the baseline data were so stable, changes in trend were clearly visible between phases. Blue, Gail, Sandra, and Bridget show increases in slope in a positive direction between baseline and treatment phases. Ivy's data trend in a slightly negative direction between phases, and Scarlet's scores are not linear in the treatment phase; they trend in a positive direction and then change to a negative direction towards the end of treatment. Therefore, the visual analysis of trend provides evidence of a basic effect between phases for Sandra, Gail, Blue, and Bridget, indicating there is evidence for experimental control with this variable.

Variability. At baseline, all six participants demonstrated stable scores, with the largest participant standard deviation being 2.6 on a measure where the normative standard deviation is 10. Therefore, it was possible to clearly visually analyze phase changes for all participants. Additionally, data for participants in the treatment phase, with the exception of Gail in week 9 who had an outlier, shows very little variability. This finding makes sense, as self-concept should be a highly stable trait that does not fluctuate greatly from one week to the next. The consistency of these data in both baseline and treatment phases allows the legitimate consideration of any trend or level changes.

Percentage of non-overlapping data. Percentage of non-overlapping data was calculated for data obtained from the BSCI–Y and is illustrated in Table 7.

Table 7

Percentage of Non-Overlapping Data for the Beck Self-Concept Inventory for Youth Across All Participants

Participant	Percentage of non-overlapping data	Effect size
Gail	83	Moderately effective
Sandra	57	Minimally effective
Blue	83	Moderately effective
Ivy	14	Ineffective
Bridget	29	Ineffective
Scarlet	66	Minimally effective

The results from the effect size calculation support the results from the visual analysis for Gail, Sandra, Blue, and Ivy. For Scarlet, there was a change in level that supported a therapeutic change, but her trend line in the treatment phase was inconsistent and, therefore, difficult to gauge an effect. According to the percentage of non-overlapping data calculation, 66% of Scarlet's data points were higher than in baseline, and her baseline data were extremely stable (standard deviation of zero), so a minimal effect size can be seen. Additional data would need to be collected over a longer treatment phase in order to see if Scarlet's data trended positively again or if her increased self-concept was simply temporary and perhaps unrelated to treatment. Finally, Bridget's score showed a positive change in trend and in level, but these changes may have been too slight to be picked up by the percentage of non-

overlapping data calculation, as the scores were so stable that even small differences would result in a positive trend or level change. Therefore, a basic effect can only be claimed for four out of six participants, not including Bridget or Ivy, and interpreting Scarlet's changes with caution. Experimental control can be claimed for this variable as at least three participants showed change.

Two-standard deviation band. In addition to the visual analysis and percentage of non-overlapping data, a statistical method for calculating significant change in single-case data, called the two-standard deviation band, was calculated for all six participants in the same manner that it was calculated for the BHS and DBT–WCCL above. For scores on the BSCI–Y, a significant improvement would mean at least two consecutive data points in the intervention phase that fall above the top band (as self-concept is something that should increase with treatment) or in other words, are at least two standard deviations higher than the mean baseline data point. The results from the calculations of the two-standard deviation band in comparison with the visual analysis are displayed in Table 8.

Table 8

Visual Analysis Summary and Two-Standard Deviation Band Results for the Beck Self-Concept Inventory for Youth Across All Participants

Participant	Visual Analysis	Change[a]	Two-standard deviation band	
Gail	Level	Yes	*M*	28.60
	Trend	Yes	*SD*	1.15
	Variability	Stable	Significant	Yes
Sandra	Level	Yes	*M*	25.30
	Trend	Yes	*SD*	.05
	Variability	Stable	Significant	Yes
Blue	Level	Yes	*M*	39.00
	Trend	Yes	*SD*	2.60
	Variability	Stable	Significant	Yes
Ivy	Level	No	*M*	26.7
	Trend	No	*SD*	0.60
	Variability	Stable	Significant	No
Bridget	Level	Yes	*M*	30.00
	Trend	Yes	*SD*	1.70
	Variability	Stable	Significant	No
Scarlet	Level	Yes	*M*	16.00
	Trend	No		0.00
	Variability	Stable	Significant	Yes
Total showing change between phases	Visual analysis	4/6	Statistical analysis	4/6

[a]The words "yes" and "no" in this column indicate whether or not a therapeutic change was noted for this type of analysis, that is, "yes" indicates a therapeutic change took place and "no" indicates that a therapeutic change did not take place.

Summary of Beck Self-Concept Inventory for Youth results. Gail, Sandra, Blue, and Bridget showed improvement in their self-concept across all three areas of

visual analysis. Scarlet showed increases in the level of her data, but her data did not show a linear trend during treatment, so it was difficult to gauge lasting improvement in her self-concept based on visual analysis alone. The results from the two-standard deviation band calculation supported the findings from the visual analysis for these four participants. According to the two-standard deviation band, four participants showed significant improvement between baseline and treatment phases: Gail, Sandra, Blue, and Scarlet. Although Scarlet's visual analysis was not conclusive because of the non-linearity in her data, the positive trend in her treatment data, before week 7 of the intervention, was significant enough to fall outside of the two-standard deviation band. Coupled with the visual analysis, however, it is difficult to claim that the treatment had a true, lasting effect on Scarlet's self-concept as her scores began a downward trend starting in intervention week 7. These results were congruent with the percentage of non-overlapping data analysis which indicated that all of the participants, except for Ivy and Bridget, showed at least a minimal effect size between baseline and treatment. Because Scarlet had a non-linear pattern to her data in the treatment phase, her percentage of non-overlapping data should be interpreted with caution. Therefore, a basic effect can only be claimed for four out of six participants, not including Bridget or Ivy, and interpreting Scarlet's changes with caution. Experimental control can be claimed for this variable as at least three participants showed change.

Summary of Evidence Measured by Progress Monitoring

Five out of six of the participants saw a significant decrease in their levels of hopelessness as measured by the BHS. Four of those five also showed significant decreases on the suicidal tendency scale on the MACI, although one of those

participants did not have a clinically prominent score at pre-treatment. Bridget showed no difference in her score on the suicidal tendency scale of the MACI, yet showed a trend of less hopelessness as measured by the BHS. One out of six of the participants showed significant improvement in their coping skills from baseline to post-treatment using visual analysis, and two out of six showed improving using statistical analysis. Thus there was little evidence to support the hypothesis that the participants' coping skills improved over the course of the intervention, but there was a lot of variability in the results. Finally, four out of six participants rated their self-concept as improving significantly. These results, in combination with the pre- and post-test results on the MACI, are discussed further in Chapter V.

Results Regarding Non-Suicidal Self-Harming

One of questions of this study was whether the intervention would reduce instances of non-suicidal self-injury (NSSI) from baseline to post-treatment. In order to measure this (and as a safety measure), participants filled out a brief questionnaire constructed specifically for this study called the self-harming questionnaire. There were two questions that simply asked whether or not participants had thought about self-harming in the past week and whether or not the participant had actually self-harmed. The responses were binary, either yes or no. This form was intended as a method of monitoring the participants' level of safety throughout the intervention, as well as a basic tool to monitor whether level NSSI was changing for participants over the course of the treatment. No statistical data analysis was used. Surprisingly, given their previous histories, none of the six participants were actively self-harming during baseline; therefore, the baseline for all participants was zero. Due to the unique nature

of this indicator, it is reported separately from the other symptoms for each participant as well as across all group members.

Gail acknowledged having the urge to self-harm on five of out the 15 weeks measured (three baselines, 11 of 12 group sessions where she was present, and post-treatment), but never actually self-harmed. Sandra reported having the urge to self-harm on eight of out the 16 weeks measured and self-harmed one time. Blue acknowledged having the urge to self-harm on 13 out the 13 weeks measured (she was absent from group three weeks) and actually self-harmed one time. Ivy acknowledged having the urge to self-harm on 16 of out the 16 weeks measured, but did not endorse any self-harming behavior. Bridget recognized having the urge to self-harm on 16 of out the 16 weeks measured and reported self-harming one time. Scarlet admitted having the urge to self-harm on 16 of out the 16 weeks measured, but never self-harmed. All of the participants thought about self-harming many of the weeks (with four of them endorsing self-harming thoughts at every data point), and only three of the participants self-harmed a single time during the baseline, treatment, post-treatment time frame (a 16-week period), while three of the participants did not self-harm at all. There was no pattern to the self-harming behavior from the three participants (e.g., after the presentation of a certain topic at group or before spring break), so it was not possible to draw conclusions about why they did it; although five out of six participants endorsed a history of self-harming when asked at the screening interview. Since none of the participants had self-harmed in the weeks before group started, there was no point of comparison to say that they reduced their self-harming behaviors from beforehand. However, the fact that three self-harmed during the treatment phase does possibly suggest a small increase for those individuals. In fact,

given the low frequency of this behavior, it was not possible to make any conclusive statements about the effect of this treatment on NSSI.

Summary

Overall, there was a high degree of variability across the participants in this study. Some saw improvements, while others either stayed the same or actually reported worsening symptoms after the course of treatment. Across participants' profiles; however, there was more consistency from hypothesis to hypothesis indicating certain positive patterns of change. In Chapter V, implications for the results across the participants are discussed as well as possible explanations for the variability in the results.

CHAPTER V

DISCUSSION

Borderline personality disorder (BPD) is the most commonly diagnosed personality disorder in the United States and presents with many dangerous symptoms such as self-harming and suicide attempts (Chanen et al., 2008). While BPD is typically diagnosed in adulthood, traits of the disorder can begin showing up in early adolescences, including, but not limited to, dangerous self-harming and suicidal behaviors (Miller et al., 2008). Not only are these behaviors highly dangerous for the adolescent committing them, but also they are stressful for the caretakers of the teen and highly resource-intensive for the health care workers and health care system responsible for keeping the adolescent safe. Furthermore, because the symptomology of BPD in adolescents looks very similar to the behaviors presented in adults with BPD, it stands to reason that treatment of these symptoms early on might help prevent the manifestation of full BPD later in the adolescent's life (Miller et al., 2008). Dialectical behavior therapy (DBT) has been tried and tested with both adult and adolescent populations displaying features of BPD and has illustrated its efficacy in reducing a number of psychopathologies (self-harming, suicide, depression, externalizing behaviors, and eating disorders). Application of the full, four-part model of DBT, however, is expensive and time intensive and, therefore, impractical to

implement in a school where adolescents spend most of their time (Groves et al., 2012).

The purpose of the current study was to measure the effectiveness of DBT group skills training in reducing both the distressing symptoms (i.e., anxiety, depression, suicidality, and hopelessness) and the prominent features (i.e., self-harming and unstable self-concept) of BPD. Additionally, it was expected that participants would demonstrate more positive coping skills as a result of this treatment. If DBT-based group skills training could be shown to effectively reduce these concerning behaviors, it could be argued that the group skills training portion of the therapy model might be delivered on its own within the school setting, placing it within reach as an indicated intervention within a tiered model of services. If this therapy proved to be effective and could be seamlessly implemented in a school environment, it could serve as a viable treatment approach for school psychologists and social workers working in high schools across the country.

Unfortunately, findings for this study were highly variable across of the participants and their various symptoms. It was interesting to note that the six participants definitely demonstrated symptoms of BPD indicating the need for this type of intervention in a school setting. Participants endorsed self-harming, had a history of hospitalizations, and rated themselves as in the clinically prominent range on a variety of symptoms. As mentioned before, one of the participants had been hospitalized nine times in her adolescence for suicidal ideology; two other participants had been hospitalized in the three months preceding the study for suicidal ideology, with one of them hospitalized twice in that timeframe. Furthermore, all six participants had contemplated suicide at some point in their past, and all had self-harmed at least

once within the past six months. Clearly, these adolescents were displaying many of the dangerous characteristics of BPD and were in need of treatment sooner rather than later. Furthermore, just in the 12 weeks of working with these young women, they shared stories of family tragedy, non-acceptance, past abuse, and loss. Providing this treatment at no cost and conveniently in the school building during the school day allowed them to receive treatment to which they might not have otherwise had access.

Reductions in Distressing Symptoms

It was hypothesized that lower levels of distressing symptoms (i.e., depression, anxiety, and hopelessness) would be demonstrated after 12 weeks of DBT-based group skills training. This hypothesis was included because depression is an extremely common comorbid symptom with BPD diagnoses and has been shown in some cases to be decreased through DBT treatment (Harley, Sprich, Safren, Jacobo, & Fava, 2008). Unfortunately, the results for this question across all six participants indicated that no one experienced a significant reduction in the distressing symptom of depression. While disappointing, this result was not surprising, as depression is a highly stable symptom that often takes much longer than the 12 weeks in which this group was offered (Brent et al., 1998). Other factors that have been shown to mitigate improvement in depression are comorbid anxiety issues, which five out of six participants reported at the start of treatment, as well as cognitive distortion, which could be argued is a trait of BPD (Linehan, 1993; Millon, 2006), and high levels of hopelessness, all experienced by the participants at the outset of treatment in combination with their depression.

This finding was also congruent with past research indicating that participants who suffer from BPD and go through a DBT-based treatment would not necessarily

experience a reduction in their depression symptoms (Linehan et al., 1991; Linehan et al., 2006). Linehan hypothesized that patients suffering from BPD have a whole host of other issues that minimize urgency of their depression and so, therefore, the treatment is not meant to target the depression itself, but the dangerous behaviors that come with borderline traits in combination with depression, like self-harming, attrition from therapy, and suicide attempts. The second reason that Linehan expected this outcome was because patients with severe borderline symptoms may have a complex set of psychological issues, and so addressing their comorbid depression with these other issues is more difficult to treat than a client with stand-alone depression. For example, Ivy's somatization symptoms were so severe that she was experiencing psychogenic (non-neurological) seizures. Scarlet was experiencing severe issues around her lesbian identity and her perception that her father was homophobic and would not accept her as she is. Blue lost an immediate family member during the course of the intervention. Thus the young women in this study were experiencing a whole host of complex psychological issues in addition to their depression. Linehan explains that the less severe the borderline symptoms, the more likely to see significant reductions in other symptoms, like depression and anxiety throughout the course of treatment (Linehan et al., 2006). Gail is a good example of this phenomenon, as her scores on the borderline tendency scale were the lowest at pre-treatment and she experienced the greatest decreases in all of her symptoms compared to her peers in the group. Furthermore, it appears that the participants who were experiencing clinically prominent levels of depression at baseline but were not above clinically prominent levels of borderline tendency (Gail, Blue, and Scarlet) showed very little improvement in their depression scores, and their scores on the borderline tendency scale actually

increased to above clinical levels. Thus it appears that the treatment had a deleterious effect on the participants who were experiencing depression as their primary symptom rather than having borderline features as the most prominent cluster of symptoms. It might have been more appropriate for these three participants to have been in an intervention geared specifically for depression, like cognitive behavioral therapy (Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012) or interpersonal process therapy (Hollon, Thase, & Markowitz, 2002), as it is possible that a kind of peer contagion may have contributed to increased BPD symptoms while their depression did not improve.

In addition to depression, it was also hypothesized that participants would experience a reduction in the distressing symptom of anxiety from pre- to post-treatment. The results showed that three out of the six participants experienced a significant decrease in their reported anxiety levels, and three out of the six remained at the same level of anxiety. One possible explanation for this split in the results was that some participants really practiced mindfulness while others did not; this occurrence was noted each week as participants were asked about their mindfulness practice throughout the week. Consistently, some of the participants like Blue and Bridget would say they had tried while others, like Scarlet, would say they "didn't even think about it." Mindfulness is the skill taught in DBT that is most likely to target anxiety, as being focused and mindful in the present helps to reduce worry regarding the past or the present (Hofmann, Sawyer, Witt, & Oh, 2010).

Learning the skill of mindfulness, however, takes ample practice and can be difficult for some people to get in the habit of doing. For example, most mindfulness based therapies are typically taught in an 8- to 12-week format; whereas, only two

sessions of this group were dedicated to mindfulness training (Hofmann et al., 2010). Mindfulness practice can seem difficult and unhelpful at first, making people unwilling to try the techniques (Broderick & Metz, 2009). It is possible that the three participants who saw decreases in their anxiety did so because they practiced mindfulness more often and were able to become fluent with the skill of staying in the present moment. Furthermore, while mindfulness is the component of DBT that, taken alone, has been proven to be effective in reducing anxiety, in this study mindfulness was not taught to the extent that it is typically taught in DBT. Typically, there is a week of mindfulness training between every skills module. The group often starts out by members learning mindfulness and then learning the distress tolerance module followed by another two weeks of mindfulness training before switching to the next module. This format is frequently used in clinical settings, because more DBT groups are open in nature, allowing group members to join at any time. In order to avoid them entering during a training module, they are entered in during one of the mindfulness modules where they can begin to learn this skill immediately. Another reason that mindfulness is re-taught between every module is because it is considered a central tenet of DBT and is perhaps the skill that takes the most practice to truly learn (Rathus & Miller, 2015). Because of the time limited nature of the school semester (15 weeks) and because no new members could join once it began, the decision was made to cut out some of the mindfulness modules in between the skills modules. Thus the participants only had two weeks in the beginning of treatment where they officially learned about mindfulness, and then a mindfulness activity was introduced at the beginning (and sometimes end) of every group as is consistent with the dialectical

behavior therapy for adolescents (DBT–A) framework outlined by Rathus and Miller (2015).

It is possible that for the mindfulness component of the therapy to have been effective in reducing the anxiety across all participants, they would have needed repeated lessons in mindfulness, the way the therapy was originally intended. Anxiety, like depression, is a comorbid symptom that often accompanies BPD and, therefore, was not directly addressed by the therapy. Thus, while it is a positive outcome that three of the six participants rated their anxiety as significantly reduced, it was not the specific focus of this treatment.

Finally, the last distressing symptom that was the focus of this study was suicidality and hopelessness. Suicidality and hopelessness were measured using both pre- and post-treatment as well as bi-weekly progress monitoring. There was slight variation in outcomes depending on how this trait was measured. That is, according to pre- and post-treatment measures on the Millon Adolescent Clinical Inventory (MACI), 60% of participants reported lower levels of suicidality and hopelessness three weeks after the end of group. Although one member had not been in the clinically prominent range at baseline, she still had dropped quite a bit in her rating on this particular scale. An alternative measure, the Beck Hopelessness Scale (BHS), which is correlated with suicidal ideation and behavior, was used as a progress-monitoring tool on a bi-weekly basis. Using this measure, five out of six of the participants experienced a significant decrease in their hopelessness and suicidality from baseline to post-treatment. It is possible that the fifth participant, the one who did not show a significant decrease post-treatment, was responding in terms of how she felt at that moment, as opposed to how she felt over the past six months, consistent

with the instructions on the MACI. It is also possible that these two measures are slightly different, and the specific wording was enough to create variance in her ratings. It is also possible that the weeks in which this participant felt less hopeless (two weeks were outside the two-standard deviation band) were particularly good weeks, but overall her suicidality did not truly improve. Finally, the sixth participant, the only one who showed no improvement in her hopelessness or suicidality on either measure, was Ivy, the participant with the most severe display of borderline traits. It is likely that Ivy's level of severity merits more intensive therapy, such as full-model DBT, in order to see improvements, as she did not improve on any of the variables measured in this study. Either way, 67% of the participants saw a significant improvement in their suicidality after the intervention, and 83% experienced significant decreases in their hopelessness. These findings provide preliminary evidence to support that the intervention had some effect on reducing the hopelessness and suicidal ideation that frequently accompanies BPD.

These results are also congruent with past research on DBT with BPD, in that the treatment historically has been most successful in reducing hopelessness and suicidality above all other symptoms. It is likely because as Linehan et al. (1991) initially targeted this symptom in their classic research study, it has continued to be the main symptom most directly targeted by the treatment. In fact, Linehan et al. (1991) described reducing "parasuicidal and life threatening behavior" as the number one goal of DBT (p.1060). All other goals of the therapy are secondary to reducing parasuicidal or non-suicidal self-harming (NSSI) behavior. The DBT is also one of the most empirically supported treatments for reducing suicidality, and thus it follows that the strongest effect of this intervention was reducing parasuicidal behavior (Miller,

Rathus, & Linehan, 2006; Rathus & Miller, 2002). In summary, participants showed no improvement in their depressive symptoms, half showed a reduction in their anxiety, and depending on method of measurement, either four or five participants showed reduced levels of suicidal ideation and/or hopelessness, often associated with suicidal ideation and behavior. As an aside, all participants endorsed suicidal ideation (for most, this thought process was present during every single data collection point), but only three acted on these thoughts. Although no definitive statements can be made regarding this finding because of the very low level of acknowledged self-harming behavior, it does seem that despite relatively high levels of thought, participants were generally able to manage their behaviors. Within the context of these findings, it is important to keep in mind the significant stressors that were continuing for these individuals, including severe familial discord, the death of a parent, and sexual orientation and identity confusion (in the face of perceived non-acceptance from a parent).

Changes in Coping Skills

The second hypothesis proposed that participants would show a significant increase in their use of DBT-specific coping skills measured through bi-weekly progress monitoring. Again, the results were mostly not supportive of this finding, with only two of the six participants showing improvement. It was interesting to note that as the weeks progressed, the participants reported that "things were going good" or "things were going way better" and so they did not "need" to use their coping skills. In other words, one possible explanation for why there was not a better outcome on this variable despite direct skills training was that increases in their coping skills were occurring, and as a result they were experiencing fewer perceived crises. For some,

their levels of serious situations remained high, yet they did not report using either more positive nor negative coping skills. Some participants shared that they did not need to utilize their coping skills as much because they were experiencing lower levels of crises overall.

Therefore, the reasons as to why there was no change in coping skills remains unknown. It is possible that participants were using the skills but not really registering their use, that some were experiencing fewer crises, or that there was simply too much variability in the instrument. It is also possible that the instrument was not sensitive enough to measure small increases in coping skill use because it is meant to be filled out monthly (Neacsiu et al., 2010) rather than every two weeks as was done for this study. Perhaps, utilizing diary cards, a mechanism that is built into comprehensive DBT, would have been a better tool for tracking weekly or bi-weekly coping skill acquisition. Diary cards are handouts that participants fill out before coming to individual therapy each week; they track coping skill use and emotional distress levels for every day of the week between each therapy session. Diary cards are part of comprehensive treatment and not typically used in these abbreviated versions of DBT. However, they might be more sensitive to measuring coping skill use more sensitively than the DBT–Ways of Coping Checklist (DBT–WCCL). Finally, the results of the DBT–WCCL were so variable that visual analysis of level and trend was not very reliable. Perhaps utilizing a measure with more standardized items might yield less variable data that could be interpreted more easily.

Reductions in Features of Borderline Personality Disorder

The final hypothesis stated that participants would show reductions in the hallmark traits of BPD. One of the frequently reported symptoms of BPD is self-harming behaviors as well as interpersonal conflict, emotional dysregulation, erratic behavior, and unstable and/or low sense of self (Millon, 2006). Each of the participants endorsed a history of self-harming behavior and demonstrated fairly high ratings on the borderline tendency scale at pre-treatment with all but one scoring in the clinically prominent range (Gail's score indicated presence of the features). It could not be established whether the treatment affected self-harming due to the low occurrence of the behavior, both at baseline and during treatment. However, all of the participants thought about self-harming many of the weeks, and only three participants endorsed a single episode of self-harming during the 16-week period. The fact that they only self-harmed once or not at all was positive, but as noted, could not be attributed to the intervention. The NSSI is a highly addictive behavior (Victor, Glenn, & Klonsky, 2012), and, therefore, it was very positive that all participants reported such low levels of self-harming over an entire spring semester. Perhaps the skills that the participants were learning in group as replacement behaviors to self-harming aided the participants in reducing their self-harming throughout the course of treatment. Also, as was discussed earlier, if the participants were in less crises, as they said they were, they might have had less stress prompting them to self-harm.

It is the borderline features such as emotional dysregulation and interpersonal conflict that often creates the crises and stress that prompt self-harming behavior. Three out of six participants endorsed significantly fewer borderline traits post-

treatment, support their perceptions that they were experiencing fewer crises. One group member had the presence of borderline features at both pre- and post-treatment with no noted changes, and, surprisingly, two participants endorsed more traits of BPD from their original pre-treatment scores. These two participants (Blue and Scarlet) should be considered individually as each had unique circumstances. Blue suffered a family tragedy during the course of the intervention and missed almost four entire group sessions. Not only did Blue miss a third of the material taught in group, but she was dealing with a significant transition and loss. Blue's increased post-treatment scores might be due to her endorsing acting out behaviors and strong emotional reactions that she was experiencing in the face of this tragedy.

The other participant, Scarlet, rated herself as just below the clinical threshold before she started treatment and increased to just above the threshold after treatment. Although it is not possible to know why this increase occurred, Scarlet seemed resistant to treatment from the start. For example, on the first day of group, she asked whether she was "just going to sit here and read from a book for two hours every time?" At one point, about halfway through treatment, she came to group 10 minutes late, announced she did not want to attend anymore, and then left. The next week, she came back and asked if it was okay if she joined the group again. Furthermore, Scarlet frequently argued with the instructor over the merits of the skills that were being taught in the group at almost every session. Therefore, it is possible that Scarlet did not place value on the treatment and did not practice any of the skills she had learned outside of the group setting. It is also possible that Scarlet is a client who may have benefitted from the individual component of DBT, and working through her personal issues (e.g., her sexual orientation and fear of parental response) with an individual

therapist would have been extremely helpful for her. In a group setting, it was not possible to address her resistance in a focused manner as it would have detracted from the overall group. Furthermore, Scarlet endorsed the lowest overall level of self-concept of any of the participants, by a marked degree; the mean baseline score of the other five participants was 30.1 (two standard deviations below the mean), and Scarlet's mean baseline score was 16 (three and a half standard deviations below the mean). Thus she may have been more susceptible to the ideas and attitudes of other group members. Although she was slightly below the clinically prominent cutoff prior to group, after becoming friends with five other girls who displayed a higher level of these borderline behaviors, she may have begun to develop more expressions of these traits from being around these peers, a concept called peer contagion (Dishion & Dodge, 2005).

As described above, participants showed a very low level of self-concept, an associated feature of BPD. Throughout treatment, four out of six participants showed a significant increase in their sense of self-concept. Self-concept is considered a stable trait, even in adolescence (Cairns, McWhirter, Duffy, & Barry, 1990), so any gains in this trait should be considered positive for the participants. Further, because self-concept is so stable, it makes sense that not all participants would show improvement over such a short time frame. This intervention was originally intended to be 24 weeks long and was cut in half in order to make it fit into a single semester of high school (Rathus & Miller, 2015). Even with 24 weeks of therapy, the authors recommend that all participants go through the therapy twice, because the first time the clients are intended to learn the skills, and the second time through it is expected that they will be able to truly utilize the skills in their everyday lives. Perhaps with more time to learn

the skills, participants would begin to feel better about themselves (e.g., interpersonal effectiveness and building mastery) which would result in increased self-concept for all of the participants (Roepke et al., 2011). Regardless, because four out of six participants showed significant improvement in self-concept, there was some evidence to support the hypothesis that the treatment had a positive effect on self-concept.

Although it was not one of the variables measured in this study, it was also noted that generally there was a high rate of group attendance for these participants. In early studies, Linehan had specifically targeted therapy as a variable because dropping out of treatment was such a common behavior for individuals with BPD. All participants continued with group until the end of treatment. Three of the group members had 100% attendance, two missed one session each, and one missed nearly four sessions after her tragic loss. In other words, across 12 weeks of group, five of the six participants attended at least 92% of sessions. This outcome was particularly notable because group occurred on a morning when students did not have scheduled classes. It would have been very easy for the participants to skip by pretending to be at group but not going to either their study hall or group. Given that in clinic settings, successful outcomes were noted with only 69% of clients continuing therapy (Chiesa et al., 2000; Linehan et al., 2006; Panos et al., 2013), this persistence rate was an important and unexpected outcome. It is possible that the participants found value in the group (even though showing some resistance) and because it was convenient to go to school right after treatment.

Summary of Intervention Impact

From an overall perspective, there were four important findings to this study. First of all, the results indicate that teaching DBT skills in a group format can be

conducted in a traditional school setting. All of the participants were able to arrange to miss time during the school day in order to attend this group. Only one individual was pursuing therapy outside of this group, but for the other five, this was their only source of treatment (other than previous hospitalizations). Furthermore, it was clear that these six participants were in distress, suggesting the need for more intensive supports within the school setting. All but one was in the significant range on most indicators of distressing symptoms.

Secondly, on two of the major features of BPD, hopelessness and suicidality and self-concept, at least four out of six participants saw significant improvements, and for the traits of BPD, three out of five participants saw significant improvements at post-treatment. The general consensus among researchers in single-case research in the standard for generalizability of results is that five participants will show improvement (Flyvbjerg, 2006; Horner et al., 2005). The only symptom that showed significant improvement across five participants was hopelessness as measured by the BHS, which was also considered to be an indicator of suicidality. Therefore, the only hypothesis that was fully supported by these results was that the participants showed significant decreases in their levels of hopelessness and suicidality. Because this factor is related to suicidality and reducing this ideation and behavior is the number one goal of DBT, it makes sense that the one significant finding would be related to a reduction of this symptom. Although only three participants reported a direct reduction in suicidal ideation and behavior at pre- and post-treatment, the bi-weekly monitoring may have been more sensitive to change. The third general finding was that on the three areas measured that were not considered primary to the treatment (e.g., depression, anxiety, and coping skills), half of them reported improvements in their

coping skills and their anxiety. This finding suggests that some of the participants received ancillary benefits from the treatment, over and above the improvement of their specific borderline traits.

Finally, no one measure saw improvement from all six participants, but all measures except depression saw improvement in some of the participants. This finding indicates that although the intervention was not completely effective on its own, there are several indicators that suggest the promising components of this type of group. Furthermore, with some additional changes, this treatment approach might show even better outcomes. For example, this group was consolidated into 12 weeks instead of the more typical 24 sessions (Rathus & Miller, 2015). As was mentioned earlier, the recommended method of administering this intervention is to teach all of the lessons in order and then come back to the first one and do them all over again. Typically, participants are not considered graduates of DBT until they have gone through the entire treatment twice, once so they can learn it and the second time so they can live it (Rathus & Miller, 2015). The second major difference was that participants did not experience the additional weeks of mindfulness lessons taught in between the modules. Although it was initially not considered necessary for this group as there would be no new members entering, it also did not afford the current members an opportunity for re-teaching this critical skill throughout the treatment. In a components analysis of the most helpful DBT skills, mindfulness skills were ranked as significantly more helpful than some of the other skills taught (Dewe & Krawitz, 2007). Given that the intervention in this study was reduced by half, eliminated all extra mindfulness lessons, and was still able to have significant positive effects for some of the participants, it would be worthwhile to repeat this study using the standard

full 24-week treatment. This could be accomplished by starting the group at the beginning of the fall semester and running it throughout the entire year, rather than just in spring semester as was done in this study.

Previous research has shown that the full model of DBT carried out with adolescents can be extremely effective in reducing borderline traits (Fleischhaker et al., 2006). It has also been shown that the partial group only or abbreviated models can be effective at reducing symptoms highly linked to BPD, like the externalizing behaviors seen in oppositional defiant disorder (Nelson-Gray et al., 2006) or the mood dysregulation seen in bipolar disorder (Goldstein et al., 2007). But there has been little research showing the effectiveness of a partial-model DBT (group only, abbreviated) in reducing borderline traits in adolescents. This study adds to the body of research suggesting that partial model DBT can be effective in reducing suicidality and hopelessness as well as borderline tendencies and can help to increase self-concept.

One study that most closely resembles a partial model DBT that attempted to reduce the core symptoms of BPD was completed by Katz et al. (2004). In this study, the researchers administered abbreviated DBT group skills training in 10 total sessions (five sessions, two weeks in a row) along with once-weekly individual therapy. Those receiving the group showed initial improvements but were not significantly different from the control group in terms of their suicidal ideation, NSSI, or attempts at a one-year follow-up. In this study, there was a control group of individuals who received treatment as usual during the same time frame. As the current study did not have a control group, it was not possible to determine whether there would have been differences between those receiving the treatment and those who were not or only receiving supportive group counseling. Nevertheless, the results of this study,

combined with those of Katz et al. (2004), provide preliminary support that there can be some success with reducing the more serious symptoms of BPD with only a partial DBT model. But, more adjustments may be needed to the partial model to find the method that is simultaneously more efficient (than full model DBT) and is still highly effective.

Assessment of Data Analysis Procedures

In addition to considering the results in relation to the posed questions, it is also helpful to consider the methods used to assess effectiveness. Two primary methods of data analysis were utilized: pre- and post-treatment measures and progress monitoring. The measure used for the pre- and post-intervention was the MACI which provides scores in the form of base rates. Instead of a typical standard score which reports the same mean and standard deviation for every scale on the inventory, base rate scores take into account the prevalence rates of each specific characteristic that the inventory is measuring. In other words, relative to other 16- to 19-year-old females in the normative population, very few responded with raw scores in the same range as those endorsed by my participants, some of whom were near the maximum score of 115. This information was very helpful in terms of understanding how severe the symptoms were for the adolescents participating in this study. However, because there were no standard scores with confidence bands, it was difficult to interpret scores that changed only slightly in terms of what would be typical variance and what might represent a significant change. In other cases, such as Gail's anxiety scores, her post-treatment score was reduced by 25 base rate points, but because it was not clinically prominent initially, this apparent improvement in Gail's levels of anxiety was not considered significant according to the MACI base rate scoring system. In other

words, it was not very helpful to have a designated cut-off score for determining improvement on these indices when sometimes participants would fall above the score by literally one point, which could be practically insignificant. The nature of this instrument prevented interpretation beyond the clinical cutoff points. Therefore, in the future an instrument that is more sensitive to change might be a better tool to use to determine potential treatment effects.

Analysis with Single-Case Methods

The second method of data analysis that was utilized was visual analysis of graphs using level, trend, and variability as markers of change. This method is the cornerstone of single-case analysis (Kazdin, 2011) when there is not enough data to reliably conduct a statistical analysis. However, when the data at baseline are too variable, as was the case with more than one participant on the measure of coping skills, this can result in difficulties with reliably conducting visual analysis. It is difficult to determine true changes in trend or level when the data contains outliers that can skew the slope of the trend line or the mean of the level line. Current best practices in single-subject design suggest collecting five data points at baseline in order to achieve a more stable measure (Kratochwill et al., 2010). However, given the constraints of a single semester, this extended baseline was not practical. With the addition of the percentage of non-overlapping data method, however, there was more support for the findings from the visual analysis.

The third method of data analysis that was utilized was a method of determining statistical significance with single-case data called the two-standard deviation band method. This method is considered rigorous for determining statistical significance because if more than one data point falls outside two standard deviations

of the mean of the baseline data, the improvement is so unusual that the likelihood of it occurring simply by chance is less than five out of 100, or a 95% confidence interval, which is considered a stringent standard of statistical comparison (Nourbakhsh & Ottenbacher, 1994). This method also has the advantage of being sensitive to highly variable data, as it works by calculating standard deviations and is highly correlated with another well-regarded method in single-case analysis called the c-statistic (Nourbakhsh & Otterbacher, 1994). In fact, the two-standard deviation band and the c-statistic have been shown to have a 71% agreement when determining statistical significance on the same data sets (Nourbakhsh & Ottenbacher, 1994). However, when the data at baseline are too variable, as was the case with more than one participant on the measure of coping skills, this can result in a very large range for the standard deviation and, therefore, a very wide band that encapsulates all of the data. Furthermore, utilizing the two-standard deviation band assumes normality in the data spread, and this study contained too few data points to meet that assumption. Therefore, the visual analysis and the percentage of non-overlapping data were the primary methods of analysis for these data. With the addition of the band, however, there was more support for the findings of the visual analysis and the percentage of non-overlapping data. Largely, there was consistency between all three forms of single-case analysis, with only one or two, justifiable, differences in outcomes.

Consistency Between Pre- and Post-Test and Single-Case Methods of Analysis

There was only one variable that was measured using both the pre- and post-test data from the MACI and the single-case methodology with a progress-monitoring survey and that was the construct of suicidality. To measure suicidality, both the

suicidal tendency index on the MACI as well as progress-monitoring data from the BHS were examined. For the most part, there was agreement in the results yielded from the two measures. Five participants showed significant improvement in their suicidality as measured by the BHS, and three of those five also showed significant improvement on the suicidal tendency index of the MACI. One of the two participants who had significant results for the BHS but not for the MACI, simply did not have clinically significant scores to begin with on the suicidal tendency index given at baseline. It was interesting to note that this participant had been hospitalized for suicidal ideation a month prior to the start of treatment and had a baseline BHS score that indicated severe suicidality. It is not clear why her scores on the MACI did not reflect these experiences, but it is possible that she was trying to appear as better in her responses, either because she wanted to avoid another hospitalization or was initially feeling better after her treatment. In this case, her BHS scores seemed to more accurately characterize her levels of suicidality at the time of baseline. The other participant who showed disagreement between the two measures was Scarlet. Scarlet was one of the participants whose BPD scores actually went up at post-treatment as well. It is possible that Scarlet was feeling particularly negatively affected at the time when she filled out the post-treatment MACI, because it was the end of the school year and she was very disappointed in her grades, which is why all of her scores were so inflated. It is also possible that her borderline tendencies were becoming more severe and, therefore, her dramatic reporting of her suicidality increased as well, which would be characteristic of someone with borderline traits. In either case, her report on the MACI was that her suicidality was worse, while her reports on the BHS said that her suicidality was improving. The BHS measures only hopelessness, which

is very highly correlated to suicidality but is not the only component of this construct. This measure was also used over a 12-week span reflecting a longer time frame, while the MACI represents one point in time (even though individuals are asked to consider the previous six months). The MACI also measures more than one aspect to suicidality, including but not limited to hopelessness. Perhaps Scarlet answered the items on the MACI having to do with hopelessness with answers that were consistent to those on the BHS, but her answers to other items on the MACI that measured different components of suicidality were severe enough to earn her a high base rate score for that index. Overall, there was at least a 60% agreement between the scores on the suicidal tendency index on the MACI and the scores on the BHS.

Implications for School Psychologists

The findings of this study suggest that it is possible and potentially beneficial to teach a DBT-based skills group to adolescents in a school setting. It is important to note that while the therapy provided in the abbreviated 12-week form was somewhat effective, there is more evidence that suggest the therapy to be more effective in the full 24-week form (Rathus & Miller, 2002). Thus if mental health providers are planning to run these types of groups in a school, it would be best to start the curriculum at the very beginning of the school year so that there is time to run the full treatment before summer break starts. Another important implication is that the therapist who ran this study had some prior clinical experience with DBT and attended a two-day training on the therapy, but was not licensed in DBT and had not completed the extensive extra training recommended to administer DBT. Since the full DBT treatment was not provided, that level of training may not be necessary. It is difficult to know exactly what level of training is sufficient to effectively carry out this type of

skills training group, but it is likely within reach for school-based mental health providers to spend relatively little time and money and be able to conduct this type of support group in a school. Most importantly, this approach could be delivered to up to eight students at once which makes it more efficient than individual approaches. This model represents a promising approach for school-based mental health providers to offer high-quality mental health services to the most severely impacted students who might otherwise be referred outside of the school for help. Furthermore, many times referrals out of the school building result in students not getting the help they need because of difficulties with transportation to the clinic or lack of insurance to pay for the service, such as DBT (Atkins, Graczyk, Frazier, & Abdul Adil, 2003). By delivering the service in the school building and during the school day, the provider helps to ensure that students in the most need of mental health services are able to actually receive those services.

Another implication from the findings is that participants should be screened more scrupulously for inclusion, and only those who have borderline features as their primary diagnosis should be included in the group, as it appears peer contagion may have played a role in worsening BPD symptoms for the three participants who reported higher levels of borderline features at the end of treatment. Moreover, the three participants who showed lower levels of BPD traits to begin with, also showed high levels of depression at baseline and may have been treated more accurately with a therapy that is proven to improve depression. Thus more strict screening at baseline should occur. In the future, it would help to screen participants more thoroughly for specific symptoms of BPD and to require that BPD features be the primary diagnosis in order for the participants to be included in the study, such that adolescents who

have a different primary diagnosis are treated with the most effective therapy for that specific diagnosis and they are not exposed to peers with behaviors that are more borderline in nature than their own behaviors.

Limitations

The first major limitation of this research was the shortened format for this group. Ideally, the full 24 weeks of the therapy should have been conducted in the school in order to provide comparison with other studies that have provided this treatment outside the school setting. Instead, only a partial version of the group component of DBT was administered, and this format might not have been sufficient in length to effect changes across more of the participants. If the full 24 weeks had been implemented and determined to be effective, there might be more compelling evidence to suggest using this group therapy model in schools across the nation. Future research should implement the full 24-week group therapy in schools to determine whether there are greater effects across all participants.

The second limitation of this study was the fact that the researcher, who also facilitated the group, had not received the full suite of DBT trainings in order to become certified in the therapy, which requires 80 hours of classroom training and a year of practice under clinical supervision. By contrast, the researcher had 16 hours of classroom training and a year of being a co-facilitator in a clinical group, but not running the group by herself. As was found in the Trupin et al. (2002) study, where participants with the more highly trained therapists showed the most significant reduction in behavior problems, therapists having 16 hours of DBT training verses 80 hours of DBT training could potentially make a substantial difference in outcomes for the clients. Furthermore, there was no outside monitoring for fidelity to the treatment,

such as a fidelity checklist or an outside observer to make sure that the researcher was implementing the therapy as intended by the treatment manual. Possibly, deviations from the exact treatment could have occurred and the researcher herself might not have been aware of the mistakes.

The third limitation of this study was that the families of the participants did not participate in learning the treatment, which is a component of the manualized DBT–A program (Rathus & Miller, 2015). For adolescents especially, having parents or guardians participate in treatment is important because they have great influence over the environment of the adolescent participants (Rathus & Miller, 2015). Having guardians come to select group lessons would allow them to learn important skills alongside their adolescent such as validation, interpersonal effectiveness, and walking the middle path. This increases the potential for continuity in the home and school environment and may enrich an adolescent's learning of certain skills if their parents are learning and implementing them at home (Rathus & Miller, 2015). This may also help reduce familial conflict because all parties are practicing skills that improve interpersonal relationships (Rathus & Miller, 2015). Unfortunately, this was one aspect where it would be difficult to implement in a school setting as the group would be offered during the day when parents are typically at work. In order to include families, it is likely that the group would have to be offered after school. However, it might be helpful to explore other ways of including parents such as sending links of videos of the concepts, reading materials, weekly check-ins, or other methods that might allow them to be more involved and supportive of the skills being learned by their adolescents.

Future Research

Directions for future research include running a DBT-based group in a school while including the components that were excluded from this study such as the 24 weeks of therapy and a parent involvement element. Although it is possible that the abbreviated training of the facilitator had a negative effect, since the group treatment is manualized, simply ensuring fidelity to the implementation might be a sufficient condition for replication of this study. All of these components might lead to improved outcomes for all rather than only some participants. Additionally, use of different measures that are more sensitive to change, as well as including a control group, might be helpful in measuring outcomes.

Additionally, while emotional and behavioral outcomes were measured in this study, academic outcomes were not monitored at all. As an anecdotal finding, it was observed that each of the participants began to attend school more routinely and showed a high rate of attendance at group. Schools are typically most compelled to implement new programs when researchers can show positive impact on academic outcomes, so future research should explore the effectiveness of DBT in schools and possible improvements in attendance, grades, and test scores.

Finally, future research should measure participants' utilization of mindfulness skills to see if there is a direct correlation between mindfulness practice and improvement in anxious symptoms. Because it has been noted that mindfulness was rated as one of the most important skills of DBT, it may be that those who practiced this skill more experienced greater improvements in their anxiety. Without directly monitoring weekly reported practice, it was not possible to determine whether this accounted for the differences in findings as related to anxiety. In future studies,

utilizing diary cards to track mindfulness and other coping skill may prove more sensitive to measuring potential changes in the use of these skills.

Conclusion

Findings from this study suggested that a 12-week version of DBT-based group skills therapy can be implemented in a traditional high school setting and can be effective in reducing symptoms of borderline personality disorder in adolescent females. The strongest effects seemed to be on reducing suicidality and hopelessness, increasing self-concept, and reducing displays of borderline traits. Anxiety was also improved in half of the participants, and coping skills were improved in half of the participants as well. Depression did not improve significantly for any of the participants. Thus this intervention should be chosen for adolescents displaying strong borderline features and not those who are only experiencing depression or anxiety. Furthermore, this intervention can be delivered to many students at once, so it can be an effective and efficient option to implement in schools. Based on a search of the literature, there were no other studies measuring the effectiveness of a DBT group conducted inside a traditional high school setting rather than in a day-treatment or alternative school setting. Now that the precedent has been set, more research is needed to enhance the implementation of this intervention in school settings.

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APPENDIX A

EXAMPLE RECRUITING E-MAIL

Example Recruiting E-mail

Dear staff _____ High School,

My name is Emily Oros and I am the school psychology intern working here at AHS, maybe we have already met or have said hello in the halls. You may or may not know that in past clinical experiences, I have worked with girls who are struggling with depression, anxiety, rocky peer relationships, self-harming (cutting) and suicidal thoughts and actions. With these girls, I have been using a certain kind of skill building curriculum that is proven to be highly effective with that particular set of behaviors. This up-coming spring semester, I am hoping to run a girls group that uses this curriculum to help girls at AHS who are displaying some of these behaviors to learn ways to regulate their own emotions and to cope with upsetting circumstances. The group will be run during their free periods and lunches so that no instructional time is missed. If you know of any student that might benefit from a group like this, please contact me via email or phone or come down to my office (B104) to chat. You are also welcome to send the student down to me and I can meet with the student one-one to see if she might be a good fit.

Thank you so much for your help!

Emily Oros

APPENDIX B

PRE-SCREENING INTERVIEW SCRIPT

Pre-Screening Interview Script

Interviewer: There is going to be a group here at school to help girls learn how to cope with stress and tough feelings. I am going to ask you some questions that will help me know if you are going to be a good fit for this group, and will help you to find out if the group is something that you think would help you and that you would like to participate in.

Questions: This group is designed to help girls who are experiencing the following problems. Let me know if any of the following sound like you:

- Do you ever think about hurting yourself or have you ever hurt yourself?
- Do you ever think about ending your own life or have you ever tried?
- Do you feel like your emotions are out of control or change really suddenly?

Your answers tell me that you might be a good candidate for our group. Basically, if you and your parents decide you would like to join, then we will have some questionnaires for you to fill out first. The group will take place once a week after school for two hours and you will be in it with 6 or 7 other girls. Everybody will sign a contract that says they won't tell anybody who else is in the group, so it will be kept confidential. Also, all of the questionnaires you fill out will have an ID number that we give you on written them instead of your name so those will be kept confidential too. Only me, and the other woman running the group (you will meet her too) will have access to the information. During the group meetings, we won't talk about anything that has happened to you or anything private, we will just teach you and the other girls some skills about how to cope with the problems you said "yes" to before. It will feel a lot like a fun class. Does this sound like something you might be interested in? If it does, we should talk to your parents/guardians and get their permission for you to join the group, and then I will give everybody more information.

APPENDIX C

BASELINE SCREENING FORM

Baseline Screening Form

ID # _____ CONSENT FORM: YES NO

Assessment Date:
Grade: _____
Name:
Age:
Birthdate:
Address: Zip Code: Telephone:
Notice of Privacy Practices Received - Date:
Referral Source (Teacher):

Presenting Complaint: (Client's or parent's/guardian's own words)

Include if applicable:

Description of mood/behavior/symptoms ● onset ● frequency ● severity ●

abates/aggravates the symptoms:

Dysfunction in which settings:

Type of dysfunction e.g. failing grades/poor sports performance

Impact on day-to-day life

History of Behavioral Health/Psychiatric Treatment:

Past diagnoses:

Past medication trials:

Past therapeutic interventions:

Past hospitalizations:

Past suicide attempts:

History of self-injury behaviors without intent to kill self:

History of aggression:

Describe for me your relationship with your parents/caregivers:

Describe for me your relationship with your best friend:

Describe for me your relationship with your peers at school:

Have you ever heard or seen things that aren't there? If so, tell me about it.

Have you ever been diagnosed with an eating disorder?

Tell me about something you are really good at.

Tell me about something you really enjoy doing.

What do you want to do when you graduate?

APPENDIX D

CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH

UNIVERSITY of NORTHERN COLORADO

CONSENT FORM FOR HUMAN PARTICIPANTS IN
RESEARCH UNIVERSITY OF NORTHERN COLORADO

Project Title: The Effectiveness of DBT-Based Group Skills Training in a Traditional High School Setting

Researcher: Emily Oros, Ph.D Candidate, Dept. of School Psychology
Phone Number: (xxx) xxx-xxxx
E-mail: eoros@jeffco.k12.co.us
Research Advisor: Robyn Hess, Ph.D, Professor of School Psychology
Phone number: (xxx) xxx-xxxx
Email: Robyn.Hess@unco.edu

I am researching the effectiveness of a program called Dialectical Behavior Therapy (DBT) and its ability to help girls who are experiencing problems with things like depression, anxiety, difficulties getting along with others, and harming themselves. If you grant permission and if your child indicates to us a willingness to participate, your child will go through a brief screening process (taking about an hour in total) to make sure that she fits the criteria for the group. This process will take place in my office at school during your child's free period or lunch and will consist a brief interview about her past and current symptoms that lead her to want to be in this group. It will also include one survey called the MACI (Millon Adolescent Clinical Checklist). The MACI is simply a clinical survey that asks 160 "True or False" Questions. It takes about 15 minutes to complete. In order to qualify for the study the student needs to answer "yes" to self-harming once in the last 6 months or having suicidal ideation once in last 6 months when asked during the interview OR: they need to score a Clinically significant score (SS>60) on the Borderline Scale of the MACI.

 Parent Initials _____

If, after she is screened and it is determined that she meets the criteria for the group, she will be added as a member and we will meet twice a week for an hour during her free period at school with a group of about 7 other girls. In this group, I will teach the girls ways to regulate their emotions and coping skills for when they feel distressed. This is a skills teaching group and not a traditional therapy so the girls will not be talking about private experiences while in group. The girls will be talked to about the importance of confidentiality and will be asked to sign a contract agreeing not to tell their teachers or peers who else is in the group with them, so that everyone's privacy is protected.

Before the group begins and then once a week at the end of group sessions, the girls will be asked to fill out short questionnaires asking them if they self-harmed at all that week, or experienced a desire to attempt suicide, and also which coping skills they practiced that week. If your child ever answers "yes" to self-harming or suicidality you will be notified immediately. The girls will be made aware that the researcher and the school has a duty to notify their parents if they are harming or intend to harm themselves. This study is hoping to find out if this kind of skills training group is something that will be successful in a school setting, and if it is effective or not at helping girls who are experiencing these kinds of problems to feel better and to learn healthy replacement skills for their harmful behavior. I foresee very little risk to subjects beyond those that are normally encountered in learning new skills at school. Sometimes, however, acquiring awareness about yourself and how harmful your behavior is can be uncomfortable at first. The goal is to turn this discomfort into lasting behavior change that will help the subjects to lead healthier, happier lives. There is also a concern that the girls could be stigmatized for their participation in this group, if other students or staff were to find out the kinds of behaviors the group is meant to help. In order to reduce this risk, we are naming the group "Girls Skills Group" instead of anything connoting the DBT curriculum, and as mentioned before, the importance of confidentiality will be discussed with the girls. Finally, as this group is meant to help serious behaviors that are dangerous in nature, it may be determined that some of the participants could benefit from continued therapy (individual or group or both) after the group is finished. If this is something the researcher recommends or you are interested in for your child, referrals can be made to agencies outside of the school that provide this type of therapy and skills training.

To further help maintain confidentiality, files of subjects answers to surveys and interview questions will be created and numerical identifiers will replace the students' names. These files will remain in a locked filing cabinet in a locked office. The names of subjects will not appear in any professional report of this research. Please feel free to phone me if you have any questions or concerns about this research and please retain one copy of this letter for your records.

 Parent Initials _____

Participation is voluntary. You may decide not to allow your child to participate in this study and if she begins participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, please sign below if you would like to participate in this research. A copy of this form will be given to you to retain for future reference. If you have any concerns about your child's selection or treatment as a research participant, please contact Sherry May, IRB Administrator, Office of Sponsored Programs, Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1910.

Thank you for assisting me with my research.

Sincerely,
Emily Oros

Child's Full Name (please print) _____ Date_____

_____Child's Birth Date (month/day/year) _____

Parent/Guardian's Signature _____ Date _____

Researcher's Signature _____ Date_____

APPENDIX E

MINOR ASSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH

UNIVERSITY of NORTHERN COLORADO

MINOR ASSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH UNIVERSITY OF NORTHERN COLORADO

My name is Emily Oros and I'm the School Psychology intern here at_____ High School. I am researching the effectiveness of a program called Dialectical Behavior Therapy (DBT) and its ability to help girls who are experiencing problems with things like depression, anxiety, difficulties getting along with others, and harming themselves. If this sounds like something that might be helpful to you, you will meet once a week for an hour during your free period at school with me and a group of about 7 other girls. In this group, I will teach you ways to regulate your emotions and coping skills for when you feel upset. This is a skills teaching group and not a traditional therapy so you will not be talking about private experiences while in group. I will talk to you and the other group about the importance of confidentiality and you will be asked to sign a contract agreeing not to tell your teachers or peers the names of the other girls in the group with you, so that everyone's privacy is protected.

Before the group begins and then once a week at the end of group sessions, then you will be asked to fill out short questionnaires.

Each week, you will be asked to fill out a short questionnaire at the end of group asking if you harmed yourself that week or felt like you wanted to harm yourself. If you harmed yourself or felt like you wanted to, it is my duty to tell your parents so that we can keep you safe.

This study is hoping to find out if this kind of skills training group is something that will be successful in a school setting, and if it is effective or not at helping girls who are experiencing these kinds of problems to feel better and to learn healthy replacement skills for their harmful behavior.

I foresee very little risk to subjects beyond those that are normally encountered in learning new skills at school. Sometimes, however, acquiring awareness about yourself and how harmful your behavior is can be uncomfortable at first. The goal is to turn this discomfort into lasting behavior change that will help you to lead a healthier, happier lives.

If at the end of this group you feel like you want to continue learning the skills or you want to see an individual therapist, I will help you and your parents to find somewhere in the community where you can continue the group or see a therapist who practices this type of therapy.

Please feel free to phone me if you have any questions or concerns about this research and please retain one copy of this letter for your records.

Thank you for assisting me with my research.

Sincerely,

Emily Oros

Participation is voluntary. You may decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, please sign below if you would like to participate in this research.

_____

Full Name (please print)

_____ Signature

_____ Researcher's Signature

Child's Birth Date (month/day/year)_____

Date_____

APPENDIX F

SELF-HARMING WEEKLY QUESTIONNAIRE

Self-Harming Weekly Questionnaire

ID#_____ Date:_____

1. In the past week I have thought about harming myself on purpose: (circle yes or no)

   YES NO

2. In the past week I have harmed myself on purpose: (circle yes or no)

   YES NO

   If yes, how did you harm yourself?

3. If no, what did you do instead?

APPENDIX G

INSTITUIONAL REVIEW BOARD APPROVAL

UNIVERSITY of NORTHERN COLORADO

Institutional Review Board

DATE:	August 25, 2015
TO:	Emily Oros, B.S.
FROM:	University of Northern Colorado (UNCO) IRB
PROJECT TITLE:	[770251-3] The Effectiveness of DBT-Based Groups Skills Training in a Traditional High School Setting
SUBMISSION TYPE:	Amendment/Modification
ACTION:	APPROVED
APPROVAL DATE:	August 20, 2015
EXPIRATION DATE:	August 20, 2016
REVIEW TYPE:	Expedited Review

Thank you for your submission of Amendment/Modification materials for this project. The University of Northern Colorado (UNCO) IRB has APPROVED your submission. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on applicable federal regulations.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require that each participant receives a copy of the consent document.

Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please use the appropriate revision forms for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of August 20, 2016.

Please note that all research records must be retained for a minimum of three years after the completion of the project.

If you have any questions, please contact Sherry May at 970-351-1910 or Sherry.May@unco.edu. Please include your project title and reference number in all correspondence with this committee.

Hello Emily,

Thank you very much for your clarifications and modifications. Everything looks good and your IRB application is approved. Good luck with this important research.

Sincerely,

Nancy White, PhD, IRB Co-Chair

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Northern Colorado (UNCO) IRB's records.